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8

WHEN DOES DETERRENCE SUCCEED AND HOW DO WE KNOW?

By Richard Ned Lebow and Janice Gross Stein

FEBRUARY 1990

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ERRATA

page 24, paragraph 2, line 6

for: ...the three legitimate cases of extended deterrence that...

read: ...the three legitimate cases of extended deterrence success that...

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They sought it with thimbles, they sought it with care;
They pursued it with forks and hope;
They threatened its life with a railway share;
They charmed it with smiles and soap.

Lewis Carroll, *The Hunting of the Snark*

EXECUTIVE SUMMARY

Deterrence seeks to prevent undesired behaviour by convincing those who might contemplate it that the probable cost will exceed the anticipated gain. Although deterrence is an ancient strategy, it has assumed special prominence in the nuclear age, where the purpose of military establishments has increasingly become preventing instead of winning wars.

Deterrence theory and strategy have gained widespread acceptance for intellectual, political, and psychological reasons. But the propositions of nuclear deterrence theory have never been subjected to the usual empirical testing prescribed by social science. This is in large part due to the absence of reliable evidence of the calculations and decisions of Soviet and Chinese policymakers.

Deprived of good data, scholars have turned to the study of conventional deterrence, which seeks to prevent the use of force by non-nuclear threats. The pioneering empirical study of conventional deterrence, by Alexander L. George and Richard Smoke, was published in 1974. Building on the work of George and Smoke, other scholars have sought to test deterrence theory and strategy by detailed case studies and statistical analyses of a large number of cases.

The monograph begins with a review of the selection and coding of data used by prominent studies of deterrence and identifies their conceptual and empirical inadequacies. The authors then build on this critique to reformulate deterrence theory and elaborate a research programme to test its propositions.

Our critique of the major empirical studies of deterrence identifies three problem areas that future studies need to address more effectively. These are (1) the biases inherent in all data sets of deterrence and the constraints they impose on the generation and testing of hypotheses; (2) the inadequacy of existing definitions of deterrence success and failure, and the corresponding need to develop a workable definition derived from the postulates of deterrence theory; and (3) the need to explore, theoretically and empirically, the relationship between immediate and general deterrence.

These questions are addressed within the context of our research programme. This programme encompasses studies of immediate deterrence success and failure, of general deterrence and its relationship to immediate deterrence, and of the broader role deterrence plays in adversarial relations. The last question has received very little attention.

We begin with the study of immediate deterrence. The impossibility of identifying the universe of deterrence successes compels us to reject the goal, common to many studies, of assessing the efficacy of deterrence in terms of the frequency of its success and failure. Instead, we seek to investigate how and why deterrence succeeds and fails. Understanding the conditions and processes associated with the success and failure of immediate and general deterrence will tell us something about the relative importance of structure and process, and the ways in which the military balance, threats, and bargaining reputation affect adversarial behaviour.

To understand when and why deterrence succeeds, we develop a series of hypotheses that are outside of and in many ways contradictory to traditional deterrence theory. In contrast to deterrence theory which assumes that challenges are responses to opportunity, we argue that many important challenges have been need driven. This difference in motive reverses the flow of cause and effect. Opportunistic challenges are a response to incredible commitments. Need driven challenges are initiated by policymakers who may judge it rational to attack credible and well-defended

commitments because they believe, perhaps correctly, that the costs to themselves or their countries of not attacking will be even greater.

Leaders driven by need may devote much more time and energy, as did Sadat in 1973, to find strategies that design around defenders' commitments or military capabilities. They are also more likely to believe that their challenges will succeed. This motivated bias can lead to significant underestimation of an adversary's capability or resolve. The different locus of causation between opportunity and need driven challenges calls for an equivalent shift in the kinds of explanations that can account for deterrence success and failure. One of the important questions we want to examine in this connection is the extent to which factors like strategic and domestic needs, which appear to account for deterrence failure, are also present when deterrence succeeds. Our explanations of the causes of failure can only be tentative until they are validated against well-substantiated cases of deterrence success.

We also intend to examine deterrence in relation to other strategic interactions and strategies of conflict management. Our case studies indicate that one of the most critical determinants of deterrence, general and immediate, is the degree of desperation felt by a would-be challenger. Leaders are far more likely to resort to force if they believe that their strategic and political problems will become more acute in the future, that the military balance will deteriorate, and that there is little or no possibility of achieving their goals through diplomacy. Deterrence in these circumstances may only succeed in heightening the sense of desperation leaders feel, thereby making the use of force more attractive. Strategies of reassurance that seek simultaneously to reduce the pressures on leaders to use force and to create expectations of possible diplomatic gain may moderate adversarial behaviour. We propose to explore the interactive impact of reassurance and deterrence.

Another set of variables we propose to examine concerns the role perceptions of adversaries. Deterrence theory is premised on the objective determination of the roles of challenger and defender and

assumes that adversarial leaders perceive themselves accordingly. Case studies reveal little support for either proposition. Challenger and defender often have quite arbitrary meanings and role perceptions are frequently symmetrical and contested. Self-definitions of role are not only at variance with the theory but may have critical import for behaviour and the outcomes of deterrence encounters. If so, deterrence theory is an inadequate and misleading conceptualization of conflict. It encourages students of international affairs to frame adversarial relationships in terms of roles that are at variance with the self-perceptions of the principal actors. The defining concept of a deterrence encounter may itself be inappropriate given the difficulty of distinguishing deterrer from challenger once a conflict is put in context.

Finally, our analysis of existing studies of deterrence raises important questions about the methods appropriate to its study. Generally speaking, analysts have relied on two methods: detailed comparative analysis of a number of "critical" cases to assess the impact of both structural and process variables; and analysis by aggregating data across a large number of cases to permit the quantitative testing of causal models which incorporate the principal structural explanations. Although these methods are often treated as mutually exclusive, they are more appropriately conceived of as complementary. Each method has different data requirements and permits different kinds of inference.

We believe that the choice of method must be dictated by the nature of the data. The first essential step in the testing of deterrence theory is accordingly the construction of a collection of cases of immediate deterrence success and failure. This kind of collection can be built only through collaboration among historians, area experts, and analysts of deterrence. Once a valid data set is assembled, proponents and critics of deterrence can begin to test their respective hypotheses by their preferred methods with results that will be more meaningful to each other and more in accord with the canons of scientific inquiry.

INTRODUCTION

Deterrence seeks to prevent undesired behaviour by convincing those who might contemplate such action that its probable cost will exceed its anticipated gain.* Deterrence requires those who practise the strategy to define the behaviour that is unacceptable, publicize their commitment to punish or restrain transgressors, possess the means to do so, and communicate their resolve to implement their threats. Although deterrence is an old strategy, it has assumed special prominence in the nuclear age where the purpose of military establishments is no longer to win but to prevent wars.

Modern deterrence theory developed in response to the recognition by scholars and strategists that nuclear weapons were too destructive to be a rational instrument of war but that their very destructiveness might be exploited to discourage states from initiating war. The classic formulation of this paradox is Bernard Brodie's, *The Absolute Weapon*, published in 1946.[1] In the "golden age" of deterrence theory, the 1950s and 1960s, Bernard Brodie, William Kaufmann, and Thomas Schelling developed formal models of nuclear deterrence.

* We are grateful to the Canadian Institute for International Peace and Security and the United States Institute of Peace for their generous support of this research. Alexander L. George, Ted Hopf, Robert Jervis, Harald von Reikhoff, and Thomas Risse-Kappen patiently read the manuscript and provided helpful suggestions for revision and refinement.

[1] Bernard Brodie, *The Absolute Weapon* (New York: Harcourt, Brace, 1946).

They argued that it could be rational to threaten an irrational act, and explored the ways in which threats of nuclear retaliation might be made credible.[2]

Deterrence theory had its greatest impact on policy during the Kennedy administration when deterrence theorists and their students entered the government or influenced important policymakers.[3] Although subsequent administrations have rejected some of the specific strategies derived from theories of deterrence, such as mutual assured destruction, they have continued to frame their policies in terms of the fundamental propositions of deterrence theory. These propositions have also influenced, if not shaped, the nuclear policies of Britain, the Soviet Union, France, China, and Israel.[4] Strategies to prevent conventional war have also been deeply affected by the logic of deterrence theory.

Deterrence theory has gained widespread acceptance for intellectual, political, and psychological reasons. Its elegance and simplicity appeared to offer scholars a powerful and widely applicable instrument to analyze and predict strategic behaviour. It has appealed to policymakers as an instrument to exploit a weapon that cannot itself be used to achieve political goals. On a deeper level, it has served as a psychological bulwark against the fear of nuclear war. Deterrence theory argues that there are strategies that would make war initiation by either side an irrational act. We believe that this is the fundamental but unspoken reason why deterrence theory has been so influential and why there has been so little effort to test its propositions.

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[2] Bernard Brodie, *Strategy in the Missile Age* (Princeton: Princeton University Press, 1959); William W. Kaufmann, *The Requirements of Deterrence* (Princeton: Center for International Studies, 1954); Thomas Schelling, *The Strategy of Conflict* (New Haven: Yale University Press, 1960).

[3] Fred Kaplan, *The Wizards of Armageddon* (New York: Simon & Schuster, 1983).

[4] McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years* (New York: Random House, 1988); On China, see John W. Lewis and Xue Litai, *China Builds the Bomb* (Stanford: Stanford University Press, 1988), and Chong-Pin Lin, *China's Nuclear Weapon's Strategy: Tradition Within Evolution* (Lexington, Mass.: Lexington Books, 1988). The latter book argues unconvincingly that China's nuclear strategy is based on traditional Chinese approaches to strategy and is not in any way derived from Western notions of deterrence.

The widespread impact of theory developed by scholars is both flattering and alarming. It is flattering insofar as it represents one of the strongest cases of the influence of the social sciences on foreign policy. It is also alarming because the propositions of nuclear deterrence theory have never been subjected to the usual empirical testing prescribed by social science. Admittedly, this is in large part a function of the absence of good data.

Advocates of deterrence claim that it works because nuclear war has not occurred. But a counterfactual argument of this kind cannot substantiate the theory. The absence of a superpower war could be explained independently of deterrence. When and if Soviet and Chinese archives are opened, we may be able to evaluate the effect of American nuclear weapons and threats on their policies and vice versa.[5] In the spirit of *glasnost*, Soviet officials have provided information about their country's policy in the Cuban missile crisis and the Soviet-American crisis arising from the 1973 Middle East War. The evidence from these cases, admittedly incomplete, lends little support to the propositions of deterrence theory; it suggests that deterrence, as practised by both superpowers, helped to provoke the very kind of behaviour it was designed to prevent.[6]

Deprived of good data to test theories of nuclear deterrence, scholars have turned to the study of conventional deterrence. Conventional deterrence seeks to prevent the use of force by non-nuclear threats. The pioneering empirical study of conventional deterrence by a nuclear power, by Alexander L. George and Richard

[5] For a preliminary assessment, see Richard K. Betts, *Nuclear Blackmail and Nuclear Balance* (Washington: Brookings, 1987). In a series of carefully crafted case studies Betts reviews the historical evidence surrounding the use of nuclear threats by the United States, the Soviet Union, and China, and finds it inadequate to offer definitive judgments about the political efficacy of nuclear weapons in individual cases. Nor does the evidence permit general conclusions about the effectiveness of nuclear threats.

[6] Richard Ned Lebow and Janice Gross Stein, *Who Is the Enemy? Rethinking Soviet-American Relations*, forthcoming.

Smoke, was published only in 1974.[7] In a series of comparative case studies, it analyzed the practice of deterrence by the United States and developed a critique of deterrence theory. Building on the work of George and Smoke, other scholars have sought to test deterrence theory by detailed case studies and statistical analyses of a large number of cases.

These studies have generated even more controversy about the efficacy of deterrence. They have also sparked a further debate about the kinds of evidence that would be necessary to test deterrence theory properly. Our monograph addresses this latter question. It reviews the data used by several prominent studies of deterrence and their conceptual and empirical inadequacies. This critique provides the basis for our subsequent reformulation of deterrence theory and elaboration of a research programme to test its propositions.

[7] Alexander L. George and Richard Smoke, *Deterrence in American Foreign Policy: Theory and Practice* (New York: Columbia University Press, 1974).

CONCEPTUAL CONUNDRUMS

The study of deterrence poses daunting obstacles for even the most conceptually sophisticated and open-minded researchers. These obstacles do not preclude the scientific study of deterrence but they do compel investigators to design innovative research strategies and methods of data analysis. We identify and discuss some of these problems before proceeding with our critical review of prominent empirical studies.

THE STUDY OF IMMEDIATE DETERRENCE

Deterrence can take two forms: general and immediate.[8] General deterrence is based on the existing power relationship and attempts to prevent an adversary from seriously considering any kind of military challenge because of its expected adverse consequences. Immediate deterrence is specific: it is designed to forestall an anticipated challenge to a well-defined and publicized commitment. Because cases of immediate deterrence are easier to identify, most research has sought to explain their outcomes. But analyses of immediate deterrence that ignore its relationship to general deterrence offer a biased assessment of its success rate and an incomplete picture of the conditions and processes that account for its outcome.

Almost every immediate deterrence encounter is the result of a general deterrence failure.[9] General deterrence is a first line of defence

[8] This distinction is analyzed by Patrick M. Morgan, *Deterrence: A Conceptual Analysis* (Beverly Hills: Sage Library of Social Science, revised edition, 1983).

[9] A possible exception is an extended immediate deterrence encounter in which the defender only committed itself to the defence or support of the threatened country after the threat became manifest.

against adversarial challenge. Defenders resort to immediate deterrence only after general deterrence has failed or when they expect that it might do so and believe that a more explicit expression of their intent to defend their interests is useful or necessary. Because immediate deterrence is a response to indications that a challenge is likely or imminent, its success rate is a poor indicator of the overall efficacy of deterrence. Assessments of deterrence based only on immediate deterrence encounters are biased in two directions. They exaggerate the success rate of deterrence by ignoring failures of general deterrence. But they will also almost certainly underestimate the effectiveness of deterrence by examining only encounters in which adversarial leaders have begun to consider a challenge. As these cases of immediate deterrence constitute the most demanding and rigorous test of deterrence, even a low success rate may be significant.

There are also serious problems inherent in the coding of immediate deterrence encounters as successes or failures. Deterrence fails when a challenger commits the action proscribed by the defender or when the defender backs away from a commitment in the face of a challenger's threats and demands. It succeeds when an adversary contemplates a challenge but refrains from action because of a defender's efforts to buttress its commitment through military preparations, demonstrations of resolve, or other potent and credible threats of retaliation.[10] These actions by the defender must cause adversarial leaders to revise their expectations of the cost-benefit outcome of a challenge so that it no longer appears attractive or worth the risk. If they decide against a challenge for reasons that have nothing to do with the deterrent posture of the defender, the outcome cannot be considered a deterrence success.

A defender may buttress its commitment in the erroneous expectation that its adversary is contemplating a challenge. When no

[10] Deterrence is usually practised to prevent a military challenge but can and has been used to try to prevent unacceptable military deployments, e.g., the Cuban missiles, or other, non-military actions. We shall limit our analysis to military deployments and the use of force.

challenge occurs, politicians and analysts may be tempted to attribute the adversary's quiescence to deterrence. By doing so, they incorrectly and tautologically confirm their initial expectation. More difficult still are encounters that result in crises but not in the behaviour the defender was trying to deter. Here too, analysts may incorrectly conclude that deterrence was successful. We shall discuss several such examples.

The difficulty in identifying cases of deterrence successes has compelled investigators to build the case for deterrence primarily on counterfactuals. Early theoretical works frequently contended that deterrence would have worked had it been tried before Munich and against North Korea in 1950.[11] More contemporary studies routinely cite these cases as examples where deterrence could have prevented war.[12] We have disputed this claim about Munich; the evidence indicates that neither deterrence nor appeasement would have prevented Hitler from using force.[13] Even in cases where the proposition that deterrence might have succeeded is plausible, it is impossible to demonstrate. The best investigators can do is to put forward a politically consistent counterfactual argument for what might have happened if the leaders in question had acted differently.

Counterfactual argument is not restricted to those cases in which the claim is made that deterrence could have succeeded. On the contrary, most attempts to establish the success of deterrence are based on counterfactual argument; deterrence advocates frequently assert that war would have occurred if deterrence had not been practised. This too is a "what if" proposition; it is the mirror image of

[11] Thomas C. Schelling, *Arms and Influence*, (New Haven: Yale University, 1966), pp.53-54.

[12] George and Smoke, *Deterrence in American Foreign Policy*, p.142, argue that the North Korean attack would "probably" not have occurred if the United States had practised deterrence. They surmise that Stalin and North Korean leaders interpreted the failure of the Truman administration to practise deterrence as an indication that it had written off South Korea.

[13] Richard Ned Lebow and Janice Gross Stein, "Beyond Deterrence," *Journal of Social Issues* 43, no.4 (1987), pp.33-36.

the argument that deterrence would have worked had it been tried. Historical arguments designed to show why certain outcomes did not occur, lend themselves to tautological reasoning: since there was no war, deterrence must have worked. If the reasoning is not tautological, and it need not be, it is still speculative. Disciplined, well-reasoned counterfactual analysis can contribute to our understanding of deterrence but it is a weak foundation on which to test a theory and build a strategy of conflict management.

General Deterrence

In analyzing the role of deterrence in relationships it is important to distinguish between deterrence as an expression of the implications and consequences of existing power relations, and deterrence as a strategy of conflict management. The former, which Patrick Morgan refers to as general deterrence, is independent of the effort by a state to define and publicize a commitment and threaten to resist or punish any challenge to the commitment. But for deterrence to be judged a successful *strategy*, a challenge must be averted through the deliberate efforts of the deterrer to manipulate the risk of war. The credibility of such threats are, of course, related to, but not synonymous with, the relative military capabilities of the adversaries.

General and immediate deterrence frequently rely on threats of force. But unlike immediate deterrence, which is designed to protect a specific commitment that appears to be at risk, general deterrence has no precise geographic or temporal focus. It is a longer term strategy meant to discourage serious consideration of any challenge to one's core interests by an adversary. To accomplish this goal, leaders usually strive to achieve and maintain a favourable military balance. But in some conflicts, lesser forces and a credible willingness to use them may be sufficient to make a challenge unattractive to an adversary's leaders. The French *force de dissuasion* is based on this concept of "proportional deterrence."[14]

[14] Bertrand Goldschmidt, *L'aventure atomique* (Paris: Fayard, 1962); Lawrence Scheinman, *Atomic Energy Policy in France under the Fourth Republic* (Princeton: Princeton University Press, 1965); David S. Yost, "France's Deterrence Posture and Security in Europe," 2 Parts, *Adelphi Papers* nos.194-195 (London: International Institute for Strategic Studies, 1984-85).

The problem of case selection is more acute in the study of general deterrence than in immediate deterrence. Deterrence failures of either kind are identifiable. They result in crises or wars, which are not only highly visible but almost always prompt memoirs, official inquiries, and other investigations that provide the data essential for scholarly analyses. Deterrence successes, by contrast, leave few traces. Leaders are unlikely to write and to speak about their adversary's success in dissuading them from a challenge.

The difficulty in identifying cases is somewhat mitigated in cases of immediate deterrence by the fact that deterrence is attempted in the belief that a challenge is likely, or even probable. This expectation, even when wrong, is almost always a response to the expectation of some kind of threatening adversarial behaviour. Even this kind of evidence may be absent in general deterrence encounters. The success of general deterrence results in no action, making it extremely difficult to identify. If it succeeds over time, adversaries may never consider a challenge and defenders may never need to make explicit threats. The more successful general deterrence is, the fewer traces it leaves. Consequently, the search for general deterrence encounters is an open-ended process which precludes the possibility of constructing a universe of cases or a representative sample.

Coding the outcome of general deterrence is also more difficult and arbitrary because it is even more dependent than immediate deterrence on counterfactual argument. In theory, immediate deterrence successes can be documented directly; researchers need only ascertain that adversarial leaders did indeed plan or start a challenge but withdrew because of the defender's practice of deterrence. The success of general deterrence, however, must almost always be inferred from counterfactual argument. When there are no challenges, and possibly, no considerations of a challenge by adversarial leaders, there is no behavioural evidence to indicate success. Claims for success rest on the unprovable assertion that challenges would have been considered and made if deterrence had not been practised. This has not prevented politicians and scholars from asserting that nuclear deterrence has kept the peace between the

superpowers. But we have no way of knowing what superpower relations would have been like in the absence of nuclear weapons.[15] Like all claims of general deterrence success, this is not an empirical judgment.

The counterfactual basis of claims of general deterrence success also makes it impossible to distinguish between a success and a case that lies outside the scope of the theory. In immediate deterrence, this is not a theoretical problem. If an investigator is able to establish that an adversary neither considered nor planned a challenge, the case cannot be considered an immediate deterrence encounter; the practice of deterrence by the defender was then unnecessary and based on false expectations.[16] In identifying cases of general deterrence, this research strategy will not work. One would expect to find no consideration of or preparations for a challenge in both a general deterrence success and a case that is irrelevant to deterrence. Unable to differentiate between these possibilities, the researcher has no basis for identifying and coding cases. If cases can neither be identified nor coded, the efficacy of general deterrence cannot be assessed.

General deterrence also differs from immediate deterrence in that it has a temporal dimension. Its performance must be assessed over the course of an adversarial relationship. This too presents problems for assessment. For how long and how well does general deterrence have to work for it to be considered a success? To answer this question we would need a standard against which the results of any specific instance of general deterrence could be measured. Even if it were possible to develop such a benchmark, it would offer no guidance for the relative weighting of general deterrence failures in the form of immediate deterrence encounters, as opposed to wars. How would we compare the result of general deterrence in a relationship in which

[15] For an interesting debate on this subject, see John Mueller, "The Essential Irrelevance of Nuclear Weapons: Stability in the Postwar World," *International Security* 13 (Fall 1988), pp.55-79; Robert Jervis, "The Political Effects of Nuclear Weapons: A Comment," *International Security* 13 (Fall 1988), pp.80-90.

[16] Additionally, the defender must make a deterrence commitment for a case to qualify as one of immediate deterrence.

there were five successful immediate deterrence encounters over the course of ten years, two of them leading to acute crises, with another relationship in which in the same ten years there were no crises but one war?

The arbitrary nature of all temporal judgments is well illustrated by a recent study of the role of general deterrence in the Israeli-Syrian relationship.[17] Its author argues that general deterrence succeeded between 1975 and 1985 because there was only one major war between these adversaries.[18] He implicitly assumes that any year without a war counts as a success. There is no analytical justification, however, for scoring on the basis of years.[19] Any short-term measure will have the effect of artificially inflating the success rate of deterrence because the average rate of wars between even the most hostile adversaries will almost certainly be less than one a year. The Israeli-Syrian outcome of one war — of two years' duration — in the course of ten years strikes us as a serious deterrence failure. And this does not take into account the Israeli-Syrian wars of 1973 and 1974.

The Relationship Between General and Immediate Deterrence

The difficulty of studying general deterrence has led most researchers to limit their analyses to immediate deterrence. This is understandable but unsatisfactory if their goal is to assess the effectiveness of immediate deterrence. There are important links between general and immediate deterrence that affect the outcomes of both.

The Cuban missile crisis is generally considered a deterrence failure; the Soviet Union proceeded to deploy ballistic missiles in

[17] Yair Evron, *War and Intervention in Lebanon* (Baltimore: Johns Hopkins University Press, 1987).

[18] A further irony here is that this war was not initiated by the challenger but by the defender for reasons of opportunity.

[19] This point is also made by Robert Jervis, "Rational Deterrence: Theory and Evidence," *World Politics* 41 (January 1989), pp.183-207.

Cuba in the face of President Kennedy's private and public warnings that this would be unacceptable to the United States. The ensuing crisis brought the superpowers closer to the brink of war than they had ever been and this traumatic experience is thought by many to have induced more cautious foreign policies on both sides. If so, an immediate deterrence failure was a major contributing factor to the subsequent success of general deterrence.

The success of immediate deterrence is assumed by deterrence theorists to strengthen general deterrence. But there are cases of immediate deterrence successes that appear to have damaged or even undermined general deterrence. The success of the US in deterring Turkey from invading Cyprus in 1964 appears to have encouraged Greek Cypriots to believe that Washington could be counted on to do so again in 1966-67 and 1974. Greek Cypriot disregard of the political interests and rights of the Turkish community in 1974 made Turkish leaders intent on supporting that community even if it led to war with Cyprus or Greece.[20] The relationship between immediate and general deterrence cannot be captured by studies that restrict their scope to immediate deterrence encounters and fail to examine their longer term consequences.[21]

The Cuban missile crisis also illustrates how general deterrence can affect the outcome of immediate deterrence. Soviet officials insist that Khrushchev was motivated by defensive considerations: he wanted to

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[20] Andreas Papandreou, *Democracy at Gunpoint: The Greek Front* (Garden City, N.J.: Doubleday, 1970); R. R. Denktash, *The Cyprus Triangle* (London: Allen & Unwin, 1982); George W. Ball, *The Past Has Another Pattern* (New York: Norton, 1982); Thomas Ehrlich, *Cyprus, 1958-1967: International Crises and the Role of Law* (New York: Oxford University Press, 1974); Sharon Wiener, *Turkish Foreign Policy Decision-Making on the Cyprus Issue: A Comparative Analysis of Three Crises*, Duke University Ph.D. dissertation (Ann Arbor: University Microfilms, 1980); Menter Sahliner, *La politique de la Turquie dans le conflit de Chypre en 1974* (Paris: Presses-Royales, 1976).

[21] Jervis, "Rational Deterrence: Theory and Evidence," p.199, cites several examples of threats that had long-term adverse consequences. He argues that US nuclear threats in the Taiwan Straits crises of 1954-55 and 1958 may have contributed to China's decision to develop a nuclear arsenal and that China's threats to India in 1971 may have had the same outcome in New Delhi.

protect Cuba from impending invasion, compensate for US strategic superiority, and achieve "psychological equality" by exposing the United States to the same kind of proximate nuclear threat that the American Jupiter missiles, then being deployed in Turkey, posed to the Soviet Union. American officials explained that all of the measures that Khrushchev and other Soviet leaders found so threatening had been implemented in response to prior Soviet threats and claims of superiority. In retrospect it is apparent that strategic arms buildups, threatening military deployments, and bellicose rhetoric — the currency of general deterrence — exacerbated adversarial insecurities and helped to provoke the kind of challenge that general deterrence was designed to forestall.[22]

There are important and complex relationships between general and immediate deterrence. These relationships can only be understood in context, and this requires analysis of the two forms of deterrence in tandem. But existing studies compare the outcomes of immediate deterrence encounters without controlling for important differences in contextual factors. They ignore the role that general deterrence plays in determining the frequency and outcome of immediate deterrence. The best of these studies code the outcomes of immediate deterrence encounters on the basis of whether or not a challenge occurred. But that is not the only, nor even necessarily the most important, criterion of success and failure. Investigators must also consider the impact of an immediate deterrence encounter on general deterrence and on the longer term structure of adversarial relations.

[22] Richard Ned Lebow, "Provocative Deterrence: A New Look at the Cuban Missile Crisis," *Arms Control Today* 18 (July-August 1988), pp.15-16, and Lebow and Stein, *Who Is the Enemy?* ch.2.

EXISTING EMPIRICAL STUDIES OF DETERRENCE

We now proceed to examine how the better known empirical studies of immediate deterrence have dealt with the problems inherent in the selection and coding of cases of deterrence. On the basis of this review, we will propose a series of rules to govern case selection and coding and put forward a research programme for the further study of deterrence.

We examine both case studies and quantitative analyses of deterrence. The former is represented by Alexander L. George's and Richard Smoke's pioneering study, *Deterrence in American Foreign Policy*, and the latter by A.F.K. Organski and Jacek Kugler, *The War Ledger*, a subsequent article by Kugler, and the several recent studies by Paul Huth and Bruce Russett. The studies by Huth and Russett have received considerable attention in the discipline and are part of a continuing research programme.[23] We do not discuss our own

[23] A. F. K. Organski and Jacek Kugler, *The War Ledger* (Chicago: University of Chicago Press, 1980); Jacek Kugler, "Terror Without Deterrence," *Journal of Conflict Resolution* 28 (September 1984), pp.470-506; Paul Huth and Bruce Russett, "What Makes Deterrence Work? Cases from 1900 to 1980," *World Politics* 36 (July 1984), pp.496-526," and "Deterrence Failure and Crisis Escalation," *International Studies Quarterly* 32 (March 1988), pp.29-46; Paul Huth, *Extended Deterrence and the Prevention of War* (New Haven: Yale University Press, 1988), and an article length version, "Extended Deterrence and the Outbreak of War," *American Political Science Review* 82 (June 1988), pp.423-444. Reference will also be made to two earlier works of Russett: "The Calculus of Deterrence," *Journal of Conflict Resolution* 7 (June 1963), pp.97-109, and "Pearl Harbor: Deterrence Theory and Decision Theory," *Journal of Peace Research* 4 (1967), pp.89-105.

research on deterrence, although we include the cases we have investigated in Table 1.[24]

Case Selection

As Table 1 reveals, there is no consensus among researchers in their choice of cases. Of a total of forty-one cases, only twenty-three are coded by two or more studies. Only twelve are coded by three or more. None of the cases are common to all of the studies. The disparity in case selection is attributable to the different set of research questions posed by the several investigators.

Organski and Kugler are the only research team that attempted to test nuclear deterrence. They reasoned that if deterrence works, nuclear powers should "get their way" in conflicts with non-nuclear powers in the central issues in dispute. They further hypothesized that conflicts between nuclear powers should end in draws.[25] They drew

[24] Richard Ned Lebow, *Between Peace and War: The Nature of International Crisis* (Baltimore: Johns Hopkins University Press, 1981), "Deterrence Failure Revisited: A Reply to the Critics," *International Security* 12 (Summer 1987), pp.197-213, "Windows of Opportunity: Do States Jump Through Them?," *International Security* 9 (Summer 1984), pp.147-186, "Conventional and Nuclear Deterrence: Are the Lessons Transferable?," *Journal of Social Issues* 43, No.4 (1987), pp.171-191; Richard Ned Lebow and John Garofono, "Does Military Capability Enhance Security? Evidence from Soviet-American Relations," forthcoming; Richard Ned Lebow and Janice Gross Stein, "Beyond Deterrence"; Janice Gross Stein, "Calculation, Miscalculation, and Conventional Deterrence I: The View from Cairo," and "Calculation, Miscalculation and Conventional Deterrence II: The View from Jerusalem," in Robert Jervis, Richard Ned Lebow, and Janice Gross Stein, *Psychology and Deterrence* (Baltimore: Johns Hopkins University Press, 1985), pp.34-59, 60-88; "Extended Deterrence in the Middle East: American Strategy Reconsidered," *World Politics* 39 (April 1987), pp.326-352; "Deterrence and Reassurance," in Paul Stern, Jo L. Husbands, Robert Axelrod, and Robert Jervis, *Behavior, Society, and Nuclear War* (New York: Oxford University Press, 1990, forthcoming); "Deterrence and Miscalculated Escalation: The Outbreak of War in 1967," to appear in Alexander L. George, ed., *Avoiding Inadvertent War: Problems of Crisis Management* (forthcoming).

[25] Organski and Kugler, *The War Ledger*, pp.147-202, also compare these 14 disputes with 206 post-war non-nuclear disputes to test the effect of nuclear deterrence on conflict escalation and resolution.

TABLE I:
DISCREPANT CASES

Case	George & Smoke	Russett	Huth & Russett	Organski & Kugler	Kugler
Berlin Blockade (1948)	Failure	Success	Success	Success	Success
Taiwan Straits (1954-55)	Failure	Success	Success		
Suez (1956)		Success		Defective	
USSR, Egypt & Syria v. USA & Turkey (1957)	Failure		Success		
Taiwan Straits (1958)	Failure		Success		Success
Berlin (1961)	Failure		Success	Failure	Failure
India v. Nepal & PRC (1962)			Success		Failure
Cuba Missile Crisis (1962)	Failure	Success		Success	Success
Arab-Israel War (1967)			Failure	Defective	
"Black September" (Sept. 1970)			Success		
Yom Kippur War (1973)			Success	Defective	Success

their data from fourteen confrontations of both kinds "in which escalation to nuclear war was at least thought likely — and in which the workings of deterrence should be at their most visible. . . ."[26]

Organski and Kugler assert that they have identified the universe of cases in which "escalation to nuclear war was at least thought likely."[27] In a subsequent study, however, Kugler rejects four of the original fourteen and introduces four new cases. But his principal criterion for case selection, that the crisis is "possibly or likely to lead major powers to engage in a war using nuclear weapons," is fundamentally the same. The variation in case selection appears arbitrary and raises questions about the validity of both data sets. Part of the explanation for the discrepancy may be the investigators'

[26] Organski and Kugler, *The War Ledger*, p.162.
[27] *Ibid.*, p.162.

failure to explore the relevant primary and secondary sources; they relied instead on existing data sets that were not compiled to study deterrence.[28]

Most of the cases in both data sets fail to meet the criteria established by the authors. It is difficult to consider nuclear war even a remote possibility in at least eight of their cases.[29] In the Chinese civil war the Truman administration was reluctant to intervene, let alone consider the use of nuclear weapons against communist forces. In their brief discussion of the case, Organski and Kugler acknowledge that it might have been excluded from their study on the grounds that "it was an entirely internal conflict and that nuclear weapons were not involved."[30] Another inappropriate case is the Hungarian uprising of 1956. Soviet intervention did not provoke a US-Soviet confrontation because the Eisenhower administration made it clear from the outset that it had no intention of intervening. Organski and Kugler provide no justification for including it as a case in which escalation to nuclear war was possible or likely.

Organski and Kugler assert that they are looking for "good tests of deterrence."[31] But deterrence was not practised in eight of their fourteen cases, nor in eight of Kugler's fourteen.[32] The outbreak of the

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[28] Organski and Kugler, *The War Ledger*, used Robert Butterworth, *Managing Interstate Conflict, 1945-1974. Data With Synopsis* (Pittsburgh, University of Pittsburgh Center for International Studies, 1976). They revised Butterworth's evaluation of the likelihood of war, p.262, n.12, but do not describe the criteria or sources consulted to revise the collection. Kugler used data from Butterworth and R. Mahoney and R. Clayberg, "Analysis of the Soviet Crisis Management Experience: A Technical Report," and "Analysis of the Chinese Conflict Management Experience: A Summary Report," (Arlington, Va.: CACI, 1978 and 1979 respectively).

[29] These cases are the Chinese civil war (1945-49), the Czech coup (1948), the outbreak of the Korean War (1950), the Greek civil war (1951), Suez (1956), the Hungarian uprising (1956), Vietnam (1964), and the 1967 Arab-Israeli War.

[30] Organski and Kugler, *The War Ledger*, p.166-167. They admit that an objection to excluding the case "is not entirely implausible, but, of course, one could argue the other way." They do not.

[31] *Ibid.*, p.167.

[32] These cases are the China civil war (1945-49), the Czech coup (1948), the outbreak of the Korean War (1950), the Greek civil war (1951), Suez (1956), the Hungarian uprising (1956), the Berlin Wall (1961), Vietnam (1964), and the Soviet invasions of Czechoslovakia (1968) and Afghanistan (1979).

Korean War in 1950 is an example. The North Korean invasion is usually attributed to the American *failure* to practise deterrence. By reducing its aid to South Korea and by publicly defining that country as outside its defence perimeter in Asia, the Truman administration is widely believed to have sent a misleading message to Pyongyang and Moscow.[33]

In his follow-up article, "Terror Without Deterrence," Kugler interprets "the logic of deterrence" to indicate that nuclear powers should be more successful than their non-nuclear counterparts in achieving disputed objectives."[34] But deterrence only assumes that powerful states with well-defined commitments are less likely to be challenged. Kugler is addressing a different question: the ability of nuclear powers to impose their will on non-nuclear adversaries in a wide range of conflict situations. Deterrence theorists have always maintained that compellence is different from deterrence and, other things being equal, more difficult to achieve.[35] Kugler's data base and its analysis are not germane to the theory he wants to test.

Paul Huth and Bruce Russett have compiled the largest collection of cases of immediate extended deterrence. Extended deterrence

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[33] David S. McLellan, *Dean Acheson: The State Department Years* (New York: Dodd, Mead, 1976), pp.267-270; George and Smoke, *Deterrence in American Foreign Policy*, pp.141-142; Bruce Cumings, "Introduction: The Course of Korean-American Relations, 1943-1953," in Bruce Cumings, ed. *Child of Conflict: The Korean-American Relationship, 1943-53* (Seattle: University of Washington Press, 1983), pp.3-55; Peter Lowe, *The Origins of the Korean War* (New York: Longman, 1986); Joseph Goulden, *Korea: The Untold Story of the War* (New York: Times Books, 1982); Rosemary Foot, *The Wrong War: American Policy and the Dimensions of the Korean Conflict, 1950-1953* (Ithaca: Cornell University Press, 1985); Burton Kaufman, *The Korean War: Challenges in Crisis, Credibility, and Command* (New York: Knopf, 1986); Glenn Paige, *The Korean Decision* (New York: The Free Press, 1968).

[34] Kugler, "Terror Without Deterrence," p.474.

[35] J. David Singer, "Inter-Nation Influence: A Formal Model," *American Political Science Review* 17 (June 1963), pp.420-430; Schelling, *Arms and Influence*, pp.69-73. Alexander L. George, David K. Hall, and William E. Simons, *The Limits of Coercive Diplomacy: Laos, Cuba, Vietnam* (Boston: Little, Brown, 1971), by contrast, assert that whether compellence succeeds depends on how strongly motivated the challenger is, the nature of the demand, and the mixture of inducements and threats.

refers to the attempt to prevent an attack against a third party while direct deterrence is the attempt to prevent an attack against home territory. The fifty-four cases between 1900 and 1980 they have identified form the basis of their frequently cited test of deterrence theory published in *World Politics* in 1984.[36] The primary canon of scientific research is the capacity to replicate the data of other scientists through similar procedures, but we could not do so with either the selection or coding of cases by Huth and Russett.[37]

Our case by case analysis of the data set used by Huth and Russett in their 1984 study finds that only nine of the fifty-four cases qualify as immediate extended deterrence. In thirty-seven cases, we find no evidence that the alleged attacker intended to use force or that the putative defender practised deterrence; both are necessary to identify valid cases of deterrence. Four cases are reclassified as compellence and the remaining four cases are ambiguous; either they are open to multiple historical interpretations or there is insufficient evidence presently available to permit their confident classification and coding.

In many of the fifty-four cases we find that attacker and defender are improperly designated, third parties are incorrectly identified as either targets of attack or of deterrence, direct deterrence is coded as extended deterrence, and deterrence is conflated with compellence. In four cases, for example, the threats made by countries identified as defenders were designed to stop an adversary from doing something it was already doing or to compel it to do something it would not otherwise have done; such cases are properly considered compellence, not deterrence.

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[36] Huth and Russett, "What Makes Deterrence Work? Cases from 1900 to 1980." A revised data set was presented in "Deterrence Failure and Crisis Escalation"; Huth, *Extended Deterrence and the Prevention of War*, and an article length version, "Extended Deterrence and the Outbreak of War."

[37] The results are published in Richard Ned Lebow and Janice Gross Stein, "Deterrence: The Elusive Independent Variable," *World Politics* 42 (April 1990), forthcoming. We researched and recoded all the cases ourselves but asked our students to do so independently as well. We met periodically with them to compare analyses and resolve any discrepancies. We would like to thank John Garofono, Karsten Geier, Robert Herman, Aaron Karnell, Havina Dashwood-Smith, Christopher Cushing, Nabil Mikhael, and Mark Busch of Cornell University and the University of Toronto for their assistance.

In a subsequent article published in 1988, Huth and Russett reclassify and recode many of their cases. The second collection, which extends from 1885 to 1983, includes only fifty-one cases of immediate extended deterrence between 1900 and 1980. Without offering an explanation for the changes in the classification or coding of any particular case, Huth and Russett eliminate sixteen of their original cases from the second collection, add thirteen new cases, and recode five of the thirty-eight cases they retain. Without a case-by-case explanation of the changes it is difficult to understand the reasons for the low cross-study reliability between the two collections, both assembled by the same team of investigators with the same rules of classification and coding. At a minimum, these discrepancies raise serious questions about the validity and reliability of the original data set and its use to test theories of deterrence.

The second data set does not correct the problems we identified in our detailed examination of the 1984 cases. We classify only one of the thirteen new cases in the 1900 to 1980 period as a deterrence encounter. We find that the revised collection includes only ten cases of deterrence out of total of fifty-one cases. It also excludes what we regard to be the three legitimate cases of extended deterrence that were included in the first data set.

Our examination of these cases also challenges the coding of their outcomes. In their 1984 data set, Huth and Russett classify thirty-one of their cases as deterrence successes and twenty-three as deterrence failures. Of their nine cases that we designate as meeting the criteria of extended deterrence, we code three as successes and seven as failures (one compound case qualifies as a success and as a failure). None of these three successes is so designated by Huth and Russett. All of these discrepancies reveal alarmingly low levels of cross-study reliability, not only between two teams of investigators classifying and coding precisely the same set of cases, but also between two data sets coded by the same team of investigators using the same set of rules four years apart.

The obvious explanation for the discrepancy between our classification of cases and that of Huth and Russett would be different definitions of an immediate deterrence encounter. However, we concur with their definition of deterrence; our dissent is with their application of that definition to the cases. We agree that immediate extended deterrence occurs only when a third party commits itself to the defence of the country threatened with attack and an attacker contemplates military action against another country. This is not an arbitrary definition; it is derived directly from the fundamental axioms of deterrence theory.

Using this common definition, we still eliminated forty-one of the fifty-four cases from the 1984 collection and ten of the thirteen cases added to the 1988 collection. Six others from both collections should properly be set aside because of ambiguities of evidence and interpretation. We first reclassified cases of direct deterrence and then cases where the designated defender was attempting to compel rather than to deter. We then eliminated thirty-seven cases from the 1984 collection and six additional cases from the 1988 collection because they did not meet the requirements of a deterrence encounter. Of the thirty-seven cases eliminated from the 1984 collection, we find no persuasive evidence of intention to attack by the designated challenger in twenty-nine cases. We find that the identified defender did not practise immediate deterrence in twenty-seven cases. In nineteen of the cases, neither of the two necessary conditions was present. Of the six cases eliminated from the 1988 collection, we find no convincing evidence of intention to attack by the designated challenger in five cases and that the identified defender did not practise immediate deterrence in five. In five of the six cases, neither of the two necessary conditions was present.

Intention to attack is never easy to establish but can more validly be inferred from the multiple streams of evidence interpreted in context. Huth and Russett use the movement or redeployment of military forces as one of their principal indicators of the intention to attack. Military deployments, however, can be used for a wide range of purposes. We find that only a few of the military deployments

identified in the cases assembled by Huth and Russett are associated with the intention to attack. That intention could only be established by reference to other kinds of historical evidence.

A second important explanation of the variance in the identification of cases is the difference in assessments of threats to attack. Huth and Russett rely heavily on a threat to attack as an indicator of intention to attack. But threats do not always equate with intention to attack. Leaders may bluff and threaten war in circumstances in which they are not prepared to use force in the hope that this will achieve the goals they seek. We require independent evidence of a would-be challenger's intentions. To qualify as a case of deterrence, there must be evidence to indicate that the challenger considered an attack, as well as evidence that a defender attempted to deter. When this kind of evidence is unavailable, we refrain from making a judgment.

We recognize that these are strict criteria to validate cases of deterrence. We chose to work with them because they are derived directly from deterrence theory. They are also the criteria employed by Huth and Russett. Researchers confront two kinds of ambiguity in seeking to apply these criteria.[38] In some cases, definitive information about the intentions of would-be challengers is inaccessible; documents are unavailable or are still classified. We have coded these cases as ambiguous. In other cases, policymakers themselves may have been uncertain about how they would have behaved if the situation had escalated to the point where they had had to make a decision whether or not to use force. It is not obvious, for example, whether President Soekarno of Indonesia would have carried out his threat to use force against the Netherlands in 1962 if the dispute about the status of West Irian had not been resolved. Indonesian sources

[38] A third kind of ambiguity arises from attempting to establish what would have happened if deterrence had not been practised vigorously. As we noted, this is a counterfactual argument which cannot be established through examination of cases.

suggest that President Soekarno was uncertain about his intentions.[39] An examination of the forty-one cases we have excluded from the collection assembled in 1984 and the ten in the revised collection which, in our view, did not meet the requirements of the definition of deterrence, shows, however, that this is the only case of this kind.

Yet another source of the variation in the designation of cases of deterrence is the criteria used to operationalize a defender's commitment. To qualify as a case of deterrence, not only must a challenger seriously consider attack or other undesirable action, but a defender must define the unacceptable behaviour, make public the commitment to punish or restrain transgressors, demonstrate resolve to do so, and possess at least rudimentary capabilities to implement the threat. We used the most permissive interpretation of these criteria in examining the cases in the two collections. In thirty-two of the forty-three cases we eliminated from the two collections, we found either that the defender made no deterrent commitment or did not attempt tacitly to deter. If there is no attempt to practise deterrence, a case cannot be validly included in the collection.

A final explanation of the differences is the nature of the evidence consulted by the two teams of investigators. In their 1984 study, Huth and Russett cite four existing data sets — none of which were constructed explicitly for the analysis of deterrence — two general reference works, and three secondary sources.[40] Their 1988 study

[39] Even as Soekarno threatened the use of military force, the chief of the general staff of the Indonesian armed forces, General Nasution, warned that an invasion of West Irian could not take place earlier than the middle of 1962 because of logistical preparations, the need for thorough military preparations, and the necessity to absorb new military equipment. A political settlement of the status of West Irian was reached before Indonesian military leaders considered that Djakarta had the military capability to mount a successful invasion. See Ide Anak Agung Gde Agung, *Twenty Years Indonesian Foreign Policy, 1945-1965* (The Hague: Mouton, 1973); Robert C. Bone Jr. *The Dynamics of the Western New Guinea (Irian Barat) Problem* (Ithaca: Cornell University Press, 1962); Bruce Grant, ed. *Indonesia* (Melbourne: Melbourne University Press, 1964); William Henderson, *West New Guinea: The Dispute and its Settlement* (New York: Seton Hall University Press, 1973); Michael Leifer, *Indonesia's Foreign Policy* (London: George Allen & Unwin, 1983); and Guy J. Pauker, "General Nasution's Mission to Moscow," *Asian Survey* I (March 1961), pp.15-17.

[40] Huth and Russett, "What Makes Deterrence Work?," p.504, n.15.

relies on additional secondary and some primary sources.[41] A broader reading of the important primary and secondary sources is necessary to uncover the complexities, ambiguities, and interpretative problems associated with many of the cases included in the collection assembled by Huth and Russett. In reclassifying and recoding these cases, we examined both primary and secondary sources for the fifty-four cases in the original data collection as well as the thirteen cases added to the cases in the revised collection.[42]

George and Smoke analyzed the American practice of deterrence and chose to work with deterrence encounters, from Berlin to Cuba, in which the United States was the defender. The Cuban missile crisis aside, all of these cases are extended deterrence as Washington was trying to prevent Soviet or Chinese military action against third parties, usually its allies. George and Smoke also deliberately included some cases which did not qualify as deterrent, e.g., the outbreak of the Korean War and the Hungarian uprising of 1956, because of their analytical interest in the uses and limitations of commitments and their salience for Sino-American and Soviet-American relations.

The study by George and Smoke, although published some years before the others we have discussed, is much more sophisticated and

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[41] Huth, *Extended Deterrence and the Prevention of War*, p.26, n.20, cites one data collection, seven secondary sources, three encyclopedias and general reference works, and five studies of crisis by international relations scholars. But Huth has assured us that many other works were consulted, and that these represent only those he found to be most helpful.

[42] We have prepared a bibliography which includes the relevant competitive sources for each case and summaries of each case. Our case descriptions provide an explanation for our decision to accept or reject each case as a deterrence encounter. When we classified a case as one of deterrence, we make explicit our reasons for coding it as a success or failure. We consider the case summaries to be critical intellectually: there is no better way to appreciate the difficulties inherent in operationalizing theories of deterrence. Limitations of space preclude the presentation of the summaries of all the cases included in the collections by Huth and Russett, but they will be published in Kenneth Oye, ed. *Specifying and Testing Theories of Deterrence* (forthcoming) and in the interim are available from the authors on request. Representative case summaries are included in Lebow and Stein, "Deterrence: The Elusive Dependent Variable."

methodologically self-conscious. Recognizing the difficulty of identifying deterrence successes, George and Smoke limited their cases to failures. They nevertheless acknowledged the need to make controlled comparisons with successful cases to validate hypotheses derived from the study of failures and develop a more comprehensive view of deterrence.[43] George and Smoke are also meticulous in their documentation. They used extensive secondary sources, as well as the limited primary sources then available, to select and code cases, and justify their decisions for the reader. Unlike Organski and Kugler or Huth and Russett, they acknowledge uncertainties, ambiguities, and disputed interpretations of the evidence.

Coding Cases

There is little agreement among researchers about whether deterrence has succeeded or failed in individual cases. Of the twenty-three cases that are included in two or more studies, only twelve are coded commonly. This significant variation stands in sharp contrast to the reports of high inter-coder reliability made by at least one of these studies.[44]

One reason for divergent coding is the different definitions of success and failure used by analysts. Organski and Kugler do not provide an explicit definition of deterrence success and failure. They assert only that "the most powerful natural test of deterrence" is whether nuclear powers prevail over non-nuclear adversaries.[45] They code their cases as successes, failures, or draws, in accordance with this criterion. They find "no support at all for the way the theory of deterrence purports to account for the behaviour of countries involved in potentially nuclear conflicts," because "Nonnuclear powers defied, attacked, and defeated nuclear powers and got away with it. There is simply no way in the world given these findings," they conclude, that "one can support the theory of deterrence as founded."[46]

[43] George and Smoke, *Deterrence in American Foreign Policy*, p.517.
[44] Kugler, "Terror Without Deterrence," pp.476-477.
[45] Organski and Kugler, *The War Ledger*, p.126.
[46] *Ibid.*, p.176.

The conclusions drawn by Organski and Kugler contradict their description of their cases and classification of their outcomes. They offer the judgment that "Nuclear powers were often the target of extraordinary provocative attacks on the part of non-nuclear countries." But in none of their fourteen cases did a conventional power attack a nuclear adversary.[47] An attack on a nuclear power by a non-nuclear power, moreover, would not necessarily be inconsistent with nuclear deterrence. It would only qualify as an immediate deterrence failure if the nuclear power had threatened retaliation in response to an attack. Deterrence cannot fail in the absence of the practice of deterrence. An all-out attack would qualify as a general deterrence failure because nuclear weapons are implicitly, if not explicitly, designed to prevent such attacks. But if the action in question is a minor one — like the downing by North Korea of an EC-121 reconnaissance aircraft in April 1969 — it can only count as a deterrence failure if the action was proscribed in advance by the defender.

The interpretation by Organski and Kugler of their cases points to an insensitivity to the difference between compellent and deterrent threats. They treat them as synonymous, and code compellence successes and failures as deterrence successes and failures. Deterrence, however, represents a special kind of threat. Deterrence theorists distinguish it from other kinds of threats by its objective — to *prevent* a specified behaviour — and by its operational requirements: the defender must define a commitment before it is challenged, communicate its existence to would-be challengers, and threaten to resist or punish a challenger, and possess the means to do

[47] Organski and Kugler do not describe such attacks in their case descriptions. The closest fit is the Sino-Soviet border dispute of 1969, where Chinese forces ambushed a Soviet patrol on a contested island in the Ussuri river. China was a nuclear power at the time, but Organski and Kugler do not consider it one because it lacked "sufficient nuclear capability to hurt the USSR." Even if we accept their debatable judgment about Chinese nuclear capability, the incident still cannot be coded a failure of nuclear deterrence. Nuclear weapons are not designed to prevent border incidents, nor had the Soviet Union previously committed itself to nuclear retaliation in response to such an provocation.

so.[48] Deterrence theory can be tested fairly only in cases where the defender has met these conditions.[49]

Relying on a variant of the definition developed by Russett in his 1963 article, Huth and Russett characterize a deterrence failure as an attack by the challenger resulting in more than 250 battle deaths.[50] Huth amends this definition in his book by lowering the number of battle deaths to 200 and also coding as a deterrence failure any case in which the defender is forced to accede to the challenger's demands under the threat of war.[51] The operationalization of deterrence failure by an arbitrary number of battle deaths is not derived from any theory of deterrence.

We consider that deterrence has failed when a challenger commits the action proscribed by the defender, or the defender backs away from a commitment in the face of a challenger's threats and demands. Yet, differences between the two definitions of failure account for hardly any of the variance in the coding. If we had used the operational definition of failure employed by Huth and Russett, and scored as failures only those cases with more than 200 battle deaths, we would have coded only one of their cases differently.[52]

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[48] Classical statements of deterrence and how it differs from other threats include Kaufmann, "The Requirements of Deterrence;" Henry M. Kissinger, *Nuclear Weapons and Foreign Policy* (New York: Council on Foreign Relations, 1957); Bernard Brodie, "The Anatomy Deterrence," *World Politics* 11 (January 1959), pp.173-192; Schelling, *Arms and Influence*, pp.69-73; Glenn H. Snyder, *Deterrence and Defense* (Princeton: Princeton University Press, 1961).

[49] Jack Levy, "Quantitative Studies of Deterrence Success and Failure," in Paul Stern, Robert Axelrod, Robert Jervis, and Roy Radnor, eds. *Perspectives on Deterrence* (New York: Oxford University Press, 1988); Christopher H. Achen and Duncan Snidal, "Rational Deterrence Theory and Comparative Case Studies," *World Politics* 41 (January 1989), pp.143-169.

[50] Russett, "Calculus of Deterrence," p.98, defined success as the repulse of a challenge to a client without a violent military confrontation. Huth and Russett, "What Makes Deterrence Work?," p.505, define a military attack "as a government-sanctioned engagement of its regular armed forces in combat with the regular armed forces of the protege and/or its defender, resulting in more than 250 casualties."

[51] Huth, *Extended Deterrence and the Prevention of War*, p.27.

[52] This is case number 49 in the 1984 data set and involves an attempt by Israel in 1970 to deter Syria from attacking Jordan.

In order to code a case of deterrence as successful, we require evidence that a challenger considered an attack or a proscribed action, but decided against proceeding because the defender persuaded the challenger that there would be serious and unacceptable consequences. This definition of success is derived directly from the postulates of theories of deterrence. When reliable evidence of a challenger's calculation is lacking, no decision can be made about the coding of the outcome of a deterrence encounter.

An important factor in the explanation of the difference in coding outcomes is the tendency of Huth and Russett to measure the acceptability of the outcome of a crisis or conflict to the defender rather than the success and failure of deterrence. The Cuban missile crisis, not included by Huth and Russett because it is a case of direct deterrence from the American perspective, offers a nice illustration of the difference. President Kennedy warned the Soviet Union through public and private channels that he would not tolerate the introduction of offensive weapons in Cuba. Khrushchev challenged Kennedy's commitment by attempting to deploy medium and intermediate missiles on the island. Deterrence had failed. The outcome of the crisis was quite different: through a partial blockade of Cuba and the threat of an air strike, Kennedy compelled Khrushchev to agree to remove the Soviet missiles. The result was a partial compellence success.[53]

George and Smoke derive their definition of success and failure from the strategies of challenge chosen by initiators. They identify three strategies, each of which they associate with a different set of

[53] George and Smoke have pointed out that the definition used by Huth and Russett confuses the military consequences of a defender's response to a challenge — that is, to a deterrence failure — with the success and failure of deterrence itself. Because they conflate deterrence and defence, Huth and Russett code as successes cases that other investigators code as failures: the Berlin blockade, Suez, and the second Taiwan Straits crisis. George and Smoke, *Deterrence in American Foreign Policy*, p.517 n.447. We designate the Cuban missile crisis as a partial compellence success because to get Khrushchev to remove Soviet missiles, Kennedy agreed not to invade Cuba and to withdraw the Jupiter missiles in Turkey. *Who Is the Enemy?*, forthcoming.

conditions, degree of calculated risk, and type of deterrence failure. The most serious deterrence failure is the "fait accompli," a maximum effort by the initiator, acting under the mistaken assumption that there is no commitment, to achieve its objective quickly so as to deprive the defender of the time and opportunity to reverse its policy of no commitment. George and Smoke use the North Korean attack on South Korea in June 1950 as the example par excellence of this strategy.

The least serious deterrence failure is the "limited probe." The initiator, uncertain of the defender's response, provokes a carefully managed and controlled confrontation to test the defender's commitment. In both Taiwan Straits crises, George and Smoke argue, China sought to clarify the US commitment to nationalist China and the offshore islands under its control. The third type of deterrence failure is "controlled pressure." This occurs when the initiator believes that the defender's commitment is unequivocal but soft, and attempts to erode that commitment through threats and provocations. The Berlin crises of 1958 and 1961 typify this pattern. George and Smoke acknowledge that not every crisis will conform to one of these three types of failure; some deterrence encounters are more complex and may pass through several phases, each of which conforms to one of the three patterns. A challenge, for example, can start as a limited probe and escalate to a fait accompli if the initiator concludes that it will succeed.[54]

Defining deterrence outcomes in terms of initiators' strategies provided an important corrective to the previously one-sided focus of theories of deterrence on the defender. Nevertheless, it introduces unnecessary ambiguities in the testing of deterrence theory. The three strategies are not unique to deterrence encounters; any or all of them can be used in confrontations in which deterrence has not been practised. If the defender has made no commitment, there is no deterrence encounter. George and Smoke's prototypical example of a fait accompli, the North Korean attack on South Korea, does not

[54] George and Smoke, *Deterrence in American Foreign Policy*, pp.534-548.

qualify as a deterrence encounter because the United States never committed itself to defend South Korea.[55] In a well-publicized speech, Secretary of State Dean Acheson defined that country as outside the American defence perimeter in Asia.[56] George and Smoke recognize this problem; they admit that, "strictly speaking," two of their deterrence cases, the Soviet invasion of Hungary in 1956 and the Chinese invasion of the Tachen Islands in January 1955, cannot be considered deterrence failures "since the United States did not attempt to apply deterrence."[57] Four of their twelve case studies can be disqualified on this basis.[58]

George and Smoke's definition of deterrence failure in terms of initiators' strategies leads them to reject the usual dichotomous coding of success and failure in favour of a coding scheme that allows for partial successes and failures. Some outcomes are mixed, they insist, because the initiator may have been deterred from certain options but not from others.[59] George and Smoke argue that some limited probes fall into this category and classify all of them as partial deterrence failures. We contend that the concept of a partial deterrence failure elides the distinction between general and immediate deterrence by equating challenges with deterrence failures. A limited probe constitutes a general deterrence failure but it only qualifies as an immediate deterrence failure when the challenger carries out the specific action the defender has proscribed. If a challenge falls short of that threshold, immediate deterrence does not

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[55] George and Smoke, *Deterrence in American Foreign Policy*, pp.141-142, note that Korea might be considered a case in which deterrence was not practised. They argue instead that it is an example of a situation in which deterrence was not employed effectively. Their discussion of the background of the case, pp.143-157, is enigmatic because it supports the conclusion that deterrence was not practised. Most of the analysis is devoted to explaining why Washington made no prior commitment to defend South Korea.

[56] Dean Acheson, "Crisis in Asia — An Examination of U.S. Policy," *Department of State Bulletin*, 22, 23 January 1950, p.116.

[57] *Deterrence in American Foreign Policy*, pp.539-540.

[58] These cases are the Berlin Blockade of 1948, the outbreak of the Korean War, the Taiwan Straits crisis of 1954-55, and the Hungarian Revolution.

[59] *Deterrence in American Foreign Policy*, p.5-7.

fail.[60] If the initiator decides against the proscribed behaviour because of the resolve the defender demonstrates in the course of their confrontation, the case must be judged a deterrence success.

The Cuban missile crisis illustrates these important distinctions. George and Smoke argue — and we agree — that the missile crisis was an immediate deterrence failure because the Soviet Union deployed missiles in Cuba capable of attacking the United States with nuclear warheads.[61] President Kennedy had previously defined the deployment of such offensive weapons in Cuba as unacceptable. Had Khrushchev opted for a limited probe instead of his attempted fait accompli, he might have threatened to send medium and intermediate range missiles in addition to the substantial Soviet conventional forces already on the island. If he had then decided against the missile deployment because of Kennedy's strong opposition, the encounter could have been judged an immediate deterrence success. Khrushchev's dispatch of soldiers, advisors, and conventional weapons to Cuba does not make the incident a partial deterrence failure. Kennedy was not pleased by the Soviet conventional buildup but he did not attempt to deter it; he had advised Khrushchev that he was prepared to tolerate the presence of conventional forces and aircraft provided no offensive weapons were introduced that would directly threaten American security.[62]

This counterfactual interpretation has an historical analog in the 1961 Berlin crisis. The actions of Khrushchev and those of his allies, including the construction of the Berlin Wall, were not those Kennedy was trying to deter. As Khrushchev refrained from attacking the city or trying to force its submission through a crippling blockade, and did not attempt to deny or to interfere seriously with access by the

[60] As George and Smoke note, occasionally a defender does not proscribe a specific action, but deliberately makes generalized deterrent threats. They cite John Foster Dulles as a case in point. *Deterrence in American Foreign Policy*, pp.562-565.

[61] George and Smoke, *Deterrence in American Foreign Policy*, pp.447-491, for their treatment of this case.

[62] Lebow and Stein, *Who Is the Enemy?*, ch.3 reviews Kennedy's warnings and clarifications to Khruschev on the eve of the missile crisis.

Western powers to Berlin, the case cannot be considered an immediate deterrence failure.[63] If presently unavailable documents should one day reveal that Khrushchev had intended to carry out any of these proscribed actions but subsequently decided to refrain because of Kennedy's efforts to buttress the American commitment to defend Berlin, the confrontation would have to be judged a deterrence success. But on the basis of the available evidence, the case is probably best described as unsuccessful compellence by the Soviet Union; Khrushchev tried and failed to use the threat of a possible war over Berlin to force Western political concessions. By this reasoning, the outcomes of all four cases George and Smoke classify as limited probes and partial deterrence failures should be recoded.[64]

Despite these difficulties, the definitions by George and Smoke of deterrence success and failure more closely approximate the kind of actions specified by deterrence theories as challenges than do those of other analysts. The definition of failure is also rigorously applied by George and Smoke and used effectively to illuminate different kinds of deterrence challenges. Difficulties in its application arise because the definition is not derived from the postulates of deterrence theory. An operational definition of success and failure must be based on whether or not a challenger carries out the specific behaviour proscribed by the defender.

Beyond definitional differences, a second generic reason for variation in the coding of outcomes is differences in the interpretation of the historical evidence in individual cases. These controversies invariably concern the intentions of challengers. Judgments about whether a case qualifies as a deterrence encounter and about its outcome, require information about a putative challenger's intentions. As this is not always available, controversy thrives.

[63] George and Smoke, *Deterrence in American Foreign Policy*, p.542, agree that "the Western powers had given various intimations that their commitment to West Berlin did not include opposition to the erection of a barrier between East and West Berlin. . . ."

[64] George and Smoke, *Deterrence in American Foreign Policy*, p.541. These cases are the Berlin blockade (phase 1), the two Taiwan Straits crises (phase 1), and the Berlin Wall.

Even the most careful investigators will find coding deterrence outcomes an uncertain and controversial task. To score a deterrence encounter a success, it must be established that an adversary would have carried out the proscribed behaviour in the absence of the defender's practice of deterrence. Only rarely will investigators find a "smoking gun" in the form of documentation testifying to the constraining effect deterrence had on a would-be challenger's leaders. Most of the time they will have to build their counterfactual case on inference. For a test of deterrence to be considered valid and reliable, readers must have access to these arguments and the evidence on which they are based.

How do existing empirical studies attempt to establish the intentions of challengers? Organski and Kugler, and Kugler in his subsequent article, do not address the issue explicitly because of their misplaced focus on the policy outcomes of the challenges arising from alleged deterrence encounters. They describe each case in a paragraph or two but generally provide no explanation for their coding.

Huth and Russett make their selection and coding criteria explicit but provide no information about how they applied these criteria to individual cases. Although they are sensitive to the need to establish challengers' intentions, they frequently infer the intention to attack from the movement or redeployment of forces.[65] Military deployments, however, can be used for a wide range of purposes. We find that only a few of the military deployments identified in the cases assembled by Huth and Russett are associated with the intention to attack. Huth and Russett also assume that when a threat to attack is made, it is the equivalent to the intention to attack.[66] But threats do not always presage attacks. Leaders may not themselves know if they are prepared to carry out their threat. Or, they may bluff and threaten war in the expectation that the threat alone will achieve the goals they

[65] Russett, "The Calculus of Deterrence," p.98, acknowledges that what appears to be successful deterrence may be spurious.

[66] Huth and Russett, "What Makes Deterrence Work?," p.498, state that "The threats of the attacker and defender must be overt and clearly entail the use of military force, and the target of the attack (protege) must be clearly identifiable."

seek, at home or abroad. Using these indicators, Huth and Russett designate thirty-one of their cases as deterrence successes and twenty-three as failures in their 1984 collection and ten additional successes and three failures in their 1988 collection. Of their ten cases that we believe meet the criteria of extended immediate deterrence, we code three as successes and eight as failures (one compound case qualifies as a success and as a failure).

George and Smoke are much more sensitive to the possibility of spurious deterrence success. They have written detailed analyses of all their cases in which they examine the motives of the initiators of all the deterrence challenges in their collection. Readers may accept or reject their interpretations of a challenger's intentions, but the evidence and reasoning behind their coding decisions are explicit. Moreover, George and Smoke readily admit that their analysis cannot be precise because all their evidence about Chinese and Soviet intentions is "indirect and circumstantial."[67]

The coding of cases by George and Smoke hinges on their interpretation of initiators' goals. The success or failure of deterrence will be partial or complete, depending on what the initiator wanted to accomplish. George and Smoke do not try to mask this difficulty; they acknowledge that their conclusions must remain provisional or even speculative.[68] Indeed, more recent evidence and analyses have called into question the coding of a number of their cases.

Two such cases are the Taiwan Straits crises of 1954-55 and 1958. In both crises, the People's Republic of China (PRC) shelled the offshore islands of Jinmen (Quemoy) and Matzu, occupied by Nationalist Chinese forces. Although the PRC occupied Yijiangshan and the Tachen islands in January and February 1955, they made no attempt to invade Quemoy and Matzu. In 1955 and again in 1958, the

[67] In their analysis, George and Smoke stated that, given the incompleteness of the available evidence, the scoring of cases could only be provisional. When and if new evidence became available, cases might have to be recoded or eliminated. *Deterrence in American Foreign Policy*, p.535.

[68] George and Smoke, *Deterrence in American Foreign Policy*, p.527.

PRC stopped its artillery barrage after the United States demonstrated that it could still resupply the islands by sea. Paul Huth and Bruce Russett code both crises as deterrence successes.[69] George and Smoke are more cautious and offer a mixed assessment of the outcome: "If, as seems likely, Peking did intend to wrest Quemoy and Matsu. . . from the Nationalists, then one can regard American actions during the [1954-55] crisis as achieving a partial deterrence success." But they also consider it a partial deterrence failure because the American commitment "did not deter Peking from employing lesser options at its disposal to create controlled pressures with which to test and, if possible, to erode the U.S. commitment."[70] They offer a similar interpretation of the 1958 crisis; once again, Peking was deterred from the high-risk strategy of an invasion but not from the lower-risk initiative of an artillery assault.[71]

An opposing view — consistent with recent historical scholarship — is that the Chinese People's Republic was motivated by defensive concerns and planned no action beyond the artillery barrage. Writing about the 1958 crisis, Melvin Gurtov and Byong-Moo Hwang argue that "Mao [Zedong]'s first concern was to deflect a dangerous and growing threat to China's security at a time of rapid domestic change and military weakness. He tried to do this with a limited, low-risk preemptive move against the offshore islands in order to bring the Americans to their senses about their ally on Taiwan."[72] They cite as evidence the logistical nature of the PRC operation at the time which Pentagon sources discounted as a prelude to an attack on the offshore islands, Chinese public statements which maintained throughout the crisis that the bombardment was "punitive" and

[69] Huth and Russett, "What Makes Deterrence Work?," p.506.

[70] George and Smoke, *Deterrence in American Foreign Policy*, p.266. See also Jan Kalicki, *The Pattern of Sino-American Crises* (New York: Cambridge University Press, 1975), p.122-123.

[71] George and Smoke, *Deterrence in American Foreign Policy*, pp.363-376.

[72] Melvin Gurtov and Byong-Moo Hwang, *China Under Threat: The Politics of Strategy and Diplomacy* (Baltimore: Johns Hopkins University Press, 1980), pp.63-97. See also, Tang Tsou, "Mao's Limited War in the Taiwan Strait," *Orbis* 11 (Fall 1959), pp.332-350; Allen S. Whiting, *The Chinese Calculus of Deterrence: India and China* (Ann Arbor: University of Michigan Press, 1978), pp.240-241.

"retaliatory," not the first step in Taiwan's liberation, and Khrushchev's recollections of his conversations with Mao Zedong.[73]

Recent Chinese and American historical research tend to support the defensive interpretation of Chinese behaviour in these crises.[74] Newly available evidence from Chinese archives and Chinese officials suggests that the People's Republic intended no action beyond the artillery barrage.[75] Its purpose was to demonstrate resolve to the United States after what Chinese officials believed was their conciliatory behaviour at the Geneva Conference which, they feared, might be misunderstood as weakness. In the absence of all of the relevant Chinese documents, however, a definitive interpretation is impossible.

The problem of evidence is compounded by the political bias that, to varying degrees, pervades the selection and coding of cases involving the United States, the Soviet Union, the People's Republic

[73] According to Nikita S. Khrushchev, *Khrushchev Remembers: The Last Testament*, trans. Strobe Talbott (Boston: Little, Brown, 1970), p.263, Mao insisted that "We don't want Chiang to be too far away from us. We want to keep him within our reach. Having him [on Quemoy and Matsu] means we can get at him with our shore batteries as well as our air force. If we'd occupied the islands, we would have lost the ability to cause him discomfort any time we want."

[74] He Di, "The Evolution of the People's Republic of China's Policy Toward the Offshore Islands (Quemoy, Matsu)," in Warren I. Cohen and Akira Iriye, eds., *The Great Powers in East Asia* (New York: Columbia University Press, 1990, forthcoming). This chapter, written by a scholar from the People's Republic of China is based on Chinese documentary sources and argues that in 1954 the PRC had no plans for invading either Quemoy or Matsu. The shelling of the islands had symbolic meaning: Chinese leaders wanted to signal both their resolve and desire to avoid a wider confrontation with the US. For recent American scholarship, see Gordon H. Chang, "To the Nuclear Brink: Eisenhower, Dulles, and the Quemoy-Matsu Crisis," *International Security* 12 (Spring 1988), pp.96-122; H. W. Brands, Jr., "Testing Massive Retaliation: Credibility and Crisis Management in the Taiwan Strait," *International Security* 12 (Spring 1988), pp.124-151.

[75] Li Xiao Bing, "Chinese Intentions and the 1954-55 Offshore Islands Crisis," paper presented to the Conference on Sino-American Relations, 1949-1958, Institute of Contemporary History, Ohio University, September 27-29, 1989. At the conference, other Chinese scholars cited documentary evidence of the limited intentions of Chinese leaders at the time. Given prevailing political conditions, they asked that their names and papers not be cited at this time.

of China, and their respective allies. We doubt that analysts of deterrence are consciously biased. Rather, they rely heavily on data sets assembled by others which in turn were based on now outdated Western secondary sources about the Soviet Union, Vietnam, and China. Most of these analyses were done in the 1950s and 1960s, many of them at the height of the Cold War. With a few notable exceptions, they take the aggressive intentions of the Soviet Union and the People's Republic of China as established fact. Their authors were not predisposed to consider the possibility that Soviet or Chinese leaders may have been motivated by defensive considerations or that they did not have as their immediate objective an attack against Berlin or Taiwan. They can only explain such restraint as the result of successful deterrence.[76]

In the overwhelming majority of cases identified by Organski and Kugler, the Soviet Union or China is designated as the challenger and the United States and its allies as the defenders. The Soviet Union or China challenge the United States or its allies in seven of their fourteen cases. In another three, the United States is defending a communist country against a Soviet challenge.[77] The remaining four cases pit one communist country against another or involve, by their own admission, no challenges at all. In their 1984 collection, Huth and Russett identify twenty-five post-war cases of immediate extended deterrence; in thirteen, a communist power or its protege is designated as the challenger and the United States or its allies as defenders in seventeen cases. Huth and Russett identify only two cases in which the United States and its allies are challengers and

[76] An early and influential example of this kind of thinking was Robert E. Osgood, *Limited War: The Challenge to American Strategy* (Chicago: University of Chicago Press, 1957). For a critique of current thinking of this kind and its application to Soviet policy in Afghanistan, see Richard Herrmann, "The Soviet Decision to Withdraw from Afghanistan: Changing Strategic and Regional Images," paper presented at the Twelfth Annual Scientific Meeting of the International Society of Political Psychology, Tel Aviv, Israel, 18-23 June 1989.

[77] These three cases are the Czechoslovakian coup (1948), the Hungarian revolt (1956), and "the Second Czechoslovakian coup" [sic] (1968).

communist powers, the defenders.[78] Of the seven post-war cases they add to their 1988 collection, the United States is the challenger only in one, and the defender in two.

George and Smoke self-consciously limited their cases to those in which the United States saw itself as the defender. They did so to develop a critique of earlier theoretical and empirical research on deterrence which they rightly accuse of being apolitical, ahistorical, and theoretically unsophisticated.[79] Indeed, they argue explicitly that deterrence theory and strategy, as it was developed in the United States, was distorted by the context of the Cold War.[80] As they criticize other investigators for ignoring the ways in which the American practice of deterrence was rooted in the American historical experience, they would presumably be among the first to recognize the need to study the practice of deterrence by other states and the ways which it was conditioned by their national experience.[81]

The coding of cases is as badly affected by political bias as is their identification. Organski and Kugler code every one of their East-West confrontations in keeping with the traditional Cold War interpretation of these incidents. They express amazement and anger, for example, at how North Vietnam "defied the United States at every turn."[82] Huth and Russett describe American policy in 1964 and 1965 as an unsuccessful attempt to prevent North Vietnam from attacking the South, an interpretation contradicted by the major scholarly treatments of this conflict.[83]

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[78] Huth and Russett, "What Makes Deterrence Work?." These cases are the United States (attacker) vs. North Korea (protege) and China (defender), 1950, and Turkey and the US (attackers) vs. Syria (protege) and the Soviet Union and Egypt (defenders), 1957.

[79] George and Smoke, *Deterrence in American Foreign Policy*, pp.58-83, 88-97.

[80] *Ibid.*, p.553.

[81] *Ibid.*, pp.553-556.

[82] Organski and Kugler, *The War Ledger*, pp.165, 167.

[83] George Kahin, *Intervention: How America Became Involved in Vietnam* (New York: Knopf, 1986); Larry Berman, *Planning a Tragedy: The Americanization of the War in Vietnam* (New York: Norton, 1982); David Halberstam, *The Making of a Quagmire: America and Vietnam During the Kennedy Era*, revised edition (New York: Knopf, 1988).

George and Smoke are avowedly critical of the ways in which the Cold War has influenced the development of deterrence theory. It was, in part, this concern which led them to undertake their study. Writing before 1974, however, they had no choice but to rely on Western secondary sources about the Soviet Union and China. Most of these studies were done in the 1950s and 1960s, many of them at the height of the Cold War. To the extent that George and Smoke relied on the secondary sources they consulted, their coding of cases was affected by the political bias inherent in these analyses of the Soviet Union and China. Even then, however, the impact of political bias induced by the Cold War on their analysis was muted, in part because they were self-consciously critical of parochial interpretations. At the time, for example, they argued that the attempt by American policy-makers to use a strategy of deterrence on behalf of Taiwan confused containment with liberation, exacerbated tensions, and invited dangerous crises.[84] Given the new evidence now available, in some cases from both sides, it would be interesting for them and valuable for all of us, if George and Smoke were to re-analyze some of their most controversial crises.

The outdated interpretations of some cases do not vitiate the utility of the study by George and Smoke. It represents a pioneering effort to establish an appropriate framework for the analysis of deterrence and broke new ground in its focus on the calculations of the challenger. Consequently, even those cases whose interpretations are open to question make two kinds of enduring contributions. They describe a range of different strategies that initiators use to challenge or design around deterrence and identify many of the conditions associated with their choice. They also document the important independent role process plays in the strategic choices of both defender and challenger. By doing so, they convincingly demonstrate the need for analysts of deterrence to widen their political and conceptual horizons.

[84] George and Smoke, *Deterrence in American Foreign Policy*, p.6. They also called attention to the fact that the Soviet blockade of Berlin in 1948 ". . .cannot be regarded as a simple effort at aggrandizement, or even as an act clearly or exclusively aimed at altering the territorial status quo in the Soviets' favor." They then sketched the case, given the limited evidence available at the time, for a "defensive" Soviet response to Western policy toward West Germany, pp.111-113.

A RESEARCH PROGRAMME TO TEST DETERRENCE THEORY

Our critique of the major empirical studies of deterrence identified three problem areas that future studies need to address more effectively. These are (1) the bias inherent in all data sets of deterrence and the constraints this imposes on the generation and testing of hypotheses; (2) the inadequacy of existing definitions of deterrence success and failure, and the corresponding need to develop a workable definition derived from the postulates of deterrence theory; and (3) the need to explore, theoretically and empirically, the relationship between immediate and general deterrence. Our critique also raises questions about the relative merits and utility of case studies and quantitative analyses of deterrence.

We address these questions within the context of an expanded research programme. This programme encompasses studies of immediate deterrence success and failure, of general deterrence and its relationship to immediate deterrence, and of the broader role deterrence plays in adversarial relations. The last question has received very little attention in the literature. George and Smoke aside, studies assume that the effectiveness of deterrence can be determined by its success in preventing war. This is undeniably a primary objective of deterrence but it is not its only one; some deterrence theorists claim that successful deterrence can facilitate conflict resolution by convincing a challenger that its fundamental objectives cannot be accomplished by force.[85] Critics of deterrence contend that the reverse is more likely to occur; that deterrence will lock adversaries into confrontational patterns of response and make

their worst expectations about each other self-fulfilling.[86] We address this controversy later in the paper.

IMMEDIATE DETERRENCE

The problems associated with case selection and coding of cases make it impossible to determine the frequency of deterrence success, in large part because it is impossible to identify the universe and, consequently, to draw a representative sample of cases of either general or immediate deterrence. Nor in the absence of valid and reliable information about a would-be initiator's calculations is it possible to avoid coding the outcome of these encounters in a highly subjective manner. In the analysis of general deterrence, this problem cannot be overcome even by access to good data.

Even if these problems could be surmounted, it is not obvious what utility a measure of the frequency of deterrence success would have. Defenders generally make clear commitments and display resolve only when they think a challenge is likely. If their judgments are accurate, empirical studies might reveal a low or even negative correlation between the practice of immediate deterrence and restraint on the part of adversaries. This would not necessarily mean that deterrence is an ineffective strategy. It could be that imminent resorts to force are very difficult to forestall. A success rate of only twenty percent might be significant. To test deterrence it is necessary to control for the context in which it operates and compare the outcomes of threatening situations in which deterrence was practised with those in which it was not.

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[85] George and Smoke, *Deterrence in American Foreign Policy*, p.5, note that successful deterrence may strengthen the motivation of a dissatisfied challenger to renew its efforts later. In this sense, deterrence, even when it succeeds, is best viewed as a strategy to give parties to a dispute time and incentive to reach an accommodation. See also Alexander L. George, *Presidential Decisionmaking in Foreign Policy: Making Better Use of Information and Advice* (Boulder, Colorado: Westview Press, 1980), p.254.

[86] Lebow and Stein, "Beyond Deterrence," pp.36-40, discuss this aspect of deterrence and Lebow, "Conventional vs. Nuclear Deterrence: Are the Lessons Transferable?," *Journal of Social Issues* 43, no.4 (1987), pp.171-191, explores the damaging role of general deterrence in Soviet-American relations.

The attempt to assess the efficacy of deterrence in terms of the frequency of its success and failure is unlikely to produce meaningful results. Instead of asking how often deterrence succeeds, we should investigate *how*, *when*, and *why* it succeeds. This question is more amenable to empirical research and also more likely to generate useful theoretical and policy insights. Understanding the conditions and processes associated with the success and failure of immediate and general deterrence will tell us something about the relative importance of structure and process, and the ways in which the military balance, threats, and bargaining reputation affect adversarial behaviour.

Our review of prominent empirical studies indicated that existing definitions of deterrence success and failure are unsatisfactory because they are not derived from the theory. An acceptable definition of deterrence must take into account the distinctions between immediate and general deterrence, deterrence and compellence, and the outcome of deterrence and of a deterrence encounter.

A valid definition of deterrence must first differentiate between immediate and general deterrence.[87] A good definition must also distinguish deterrence from compellence. Deterrence seeks to prevent an actor from doing something it has not yet done. Compellence attempts to coerce an actor to do something it would not otherwise do or to stop doing something it is already doing.

At times, the two strategies are not easily separated. This problem is most acute in intrawar deterrence, where deterrence and compellence can shade into one another. During the 1973 Middle East War, the Soviet Union threatened to send troops to Egypt in response to Israel's failure to honour the cease-fire that Moscow and Washington

[87] As we noted earlier, general deterrence relies on the existing power balance to dissuade an adversary from seriously considering a military challenge because of its expected adverse consequences. Immediate deterrence is specific: the defender must define a particular behaviour as unacceptable and communicate this to the adversary before any challenge occurs.

had negotiated. The Soviet threat can be described as deterrent because its objective was to prevent Israel from cutting off and isolating the Egyptian Third Army on the west bank of the Suez Canal. But in the most direct sense it was compellent because it sought to force Israel to halt its military offensive.

The Soviet strategy might be described as "extended compellence" because its direct target was not Israel, but the United States. Soviet leaders wanted American leaders to compel Israel to cease its military action. The United States had already demanded that Israel stop its offensive; the administration's response to the Soviet threat was to put its forces on nuclear alert. American strategic and conventional forces were brought up to Defense Condition III and the next morning, Kissinger sent Brezhnev a note warning of the dangerous consequences of the introduction of Soviet forces in the Middle East. Kissinger and the other members of the National Security Council who were involved in this decision viewed their actions as deterrent; they were trying to prevent the Soviet Union from taking an action it had not yet initiated. In Moscow, Soviet leaders regarded the American alert as an irresponsible escalation because they had envisaged their own action as defensive and deterrent.[88]

The American attempt in 1940-41 to deter Japan from attacking the Netherlands East Indies illustrates another dimension of the difficulty of distinguishing deterrence from compellence, and of differentiating both strategies from other kinds of coercive diplomacy. In response to Japan's move into Indochina, the United States began to impose economic sanctions against Tokyo, beginning with an embargo on the sale of scrap iron and aviation gasoline in July 1940. Economic pressure on Japan culminated in the July 1941 embargo on the sale of oil and the freezing of all Japanese assets.[89] Great Britain and the Netherlands promptly followed suit, con-

[88] See Lebow and Stein, *Who Is the Enemy?*, ch.9.

[89] At first, only the top grades of scrap were embargoed but after the final Japanese ultimatum to Indochina a total embargo on scrap was proclaimed on 26 September 1940.

fronting Japan with the prospect of being totally cut off from access to petroleum products. Although they never referred to the concept by name, the documents of the period indicate that American leaders conceived of their sanctions as deterrent; they hoped to persuade Japan to forego further expansion in southeast Asia. Japanese leaders were surprised and interpreted American actions as evidence of the unremitting hostility of the United States to Japan. American strategy persuaded Japanese leaders that they had no choice but to attack the United States.[90]

American sanctions have been characterized as both deterrent and compellent.[91] Deterrent threats, however, are only implemented if the proscribed action occurs and when these threats are carried out, deterrence fails.[92] By imposing sanctions *before* Japan attacked any of the colonies of southeast Asia, the United States was not practising deterrence. Nor can the strategy formally be classified as compellence, because the sanctions were not accompanied by a specific demand that Japan cease doing what it was already doing, although some members of the Roosevelt administration hoped that they might encourage Japan to rethink its intention to conquer China.

There is no elegant way of coping with the kinds of problems these cases pose. Our preferred solution is to recognize that intrawar deterrence and compellence are special cases that should be studied separately. They differ from peacetime deterrence and compellence in several important ways that critically affect their practice and

[90] Paul W. Schroeder, *The Axis Alliance and Japanese-American Relations 1941* (Ithaca: Cornell University Press, 1958); Irvine H. Anderson, Jr., *The Standard-Vacuum Oil Company and United States East Asian Policy, 1933-41* (Princeton: Princeton University Press, 1975); James William Morley, ed. *The Fateful Choice: Japan's Advance into Southeast Asia, 1939-41* (New York: Columbia University Press, 1980); Michael A. Barnhart, *Japan Prepares for Total War* (Ithaca: Cornell University Press, 1987); Waldo Heinrichs, *Threshold of War: Franklin D. Roosevelt and American Entry into World War II* (New York: Oxford University Press, 1988).

[91] Russett, "Pearl Harbor: Deterrence Theory and Decision Theory," and George and Smoke, *Deterrence in American Foreign Policy*, pp.90-91, 507-508. George, Hall, and Simons, *The Limits of Coercive Diplomacy*, p.245, characterize the sanctions as compellent.

[92] Schelling, *Arms and Influence*, pp.2-6.

outcome.[93] Cases in which deterrence and compellence are practised simultaneously pose a different problem. Here, the appropriate response would be to separate these kinds of cases for purposes of analysis. As the analysis of deterrence in these encounters will be "contaminated" by the practice of compellence, compound cases of this kind should be treated as distinct for analytic purposes.

A third conceptual difficulty is the designation of the challenger and defender. Deterrence theory models a relationship by specifying two distinct roles: one party is a challenger and the other the defender. But these roles are often blurred in practice. Not infrequently, both sides view themselves as the deterrer and their adversary as the challenger. The Cuban missile crisis nicely illustrates the blurring of roles by the parties. The Kennedy administration — and Western scholars who have written about the crisis — had no doubt that the United States was the defender and the Soviet Union the challenger. The United States was trying to deter the Soviet Union from deploying offensive weapons in Cuba. But Soviet officials testify that one of their motives for deploying missiles in Cuba was to deter the United States from invading Cuba or from exploiting its strategic superiority to intimidate the Soviet Union.[94]

As we have seen, the Taiwan Straits crises offer another example of this phenomenon. The parties to these kinds of deterrence encounters are like the characters in Lawrence Durrell's *The Alexandria Quartet*. Each has a different, sometimes clashing, and equally valid, view of the social reality they all collectively create. To interpret this reality only through the prism of any one of the protagonists is to adopt, by definition, a partisan point of view. This is also applicable to the analysis of deterrence. To classify the Taiwan Straits crises as deterrence encounters is to adopt Washington's perspective on the world. To categorize American policy as compellence is to accept the Chinese diagnosis. In practice, it is essential for analysts to consider

[93] Some of the differences between deterrence and compellence in peacetime and wartime are discussed in Lebow, *Between Peace and War*.

[94] Lebow, "Provocative Deterrence," and Lebow and Stein, *Who Is the Enemy?*, ch.3.

the perspectives of both the challenger and the defender if they are to understand the motives of the protagonists, the genesis of their policies, and their response to threats.

Defining a Deterrence Encounter

We define an immediate deterrence encounter as *a challenge to a commitment*. When the behaviour proscribed by the commitment occurs, deterrence has failed. When it does not occur, even if a limited probe of the commitment takes place, deterrence has not failed. Deterrence succeeds when the challenger chooses to refrain from the proscribed behaviour because the defender's efforts to buttress its commitment made the associated costs of the proscribed action appear to exceed the expected gain. This definition is derived directly from the most fundamental postulates of deterrence theory and therefore constitutes an appropriate test of immediate deterrence. It admittedly imposes a heavy burden on investigators to find evidence about the deliberations and decisions of a would-be challenger's leaders.

Table II starts from our premise that the defining characteristic of a deterrence encounter is a challenge to a preexisting commitment. The table classifies encounters on the basis of how initiators and defenders viewed the existence and significance of defenders' commitments. It identifies six possibilities, of which three are outside the scope of deterrence because there was no prior commitment or attempt at deterrence.

The first type of deterrence encounter is one in which the initiator fails to recognize that the defender has a commitment. We include in this category only cases where the defender has made a commitment and attempted to communicate its existence to the initiator. The other two categories of deterrence are the classic cases modelled by deterrence theories; in both, the initiator recognizes the defender's commitment. The challenger may refrain from action if the commitment is sufficiently credible and potent, or proceed with a challenge if its leaders doubt the defender's capability or resolve or believe that the costs of inaction are greater than the costs of action.

TABLE II:
WHAT MAKES AN
IMMEDIATE DETERRENCE ENCOUNTER?

Initiator's Estimate of the Existence of a Defender's Commitment	Defender's Estimate of the Existence of its Commitment	Examples	Classification
No	No	US and Korea (1950), Hungary (1956)	Outside the Scope of Deterrence
No	Yes (but inaccurate)	*US and Afghanistan (1978)	Outside the Scope of Deterrence
No	Yes	**US and Cuba (1962)	Deterrence Encounter (1)
Yes	Yes	US and Berlin (1961)	Deterrence Encounter (2)
Yes (but doubts defender's resolve or capability)	Yes	UK, France, and Czechoslovakia (1938)	Deterrence Encounter (3)
Yes	No	US Beliefs that PRC Would Intervene in Vietnam	Outside the Scope of Deterrence

*The Carter administration incorrectly perceived a commitment, *ex post facto*.
**Khrushchev misjudged the existence and intensity of the US commitment to keep Soviet missiles out of Cuba.

We recognize that difficulties will occasionally arise in applying our definition because of ambiguities with respect to commitments or challenges. We intend to exclude from our data set encounters where we judge that the prior existence of a commitments is unclear. A case in point is the British government's veiled and imprecise threats against Indonesia in the summer of 1964. British and American newspapers reported that "an unidentified government official" warned that further acts of aggression against Malaysia would bring British reprisals against Indonesian air and naval bases. The British threat — if indeed there was one — failed to specify whether London

sought to deter further landings against Malaya proper or to compel Soekarno to halt low-intensity incursions into Brunei, Sabah, and Sarawak, on the island of Borneo.[95]

Commitments can also be ambiguous because of their timing. To be considered a deterrence encounter, a commitment must be made *before* the proscribed action is implemented. In reviewing other investigators' cases, we have rejected some — the North Korean invasion of South Korea in June 1950 and the Berlin blockade of 1948 — because the defender's commitment came after a challenge was made. In some instances, notably those where the proscribed action unfolds gradually, it is not easy to determine whether this condition of deterrence was met. Kennedy's famous September warnings to the Soviet Union not to deploy offensive weapons in Cuba illustrate this difficulty. Khrushchev made his decision to send missiles to Cuba in the late spring of 1962, at least ten weeks before Kennedy's warnings. But the missiles were only just arriving in Cuba at the time of Kennedy's warnings and did not begin to become operational for another six weeks.[96] Good arguments can be made for and against considering the missile crisis an immediate deterrence encounter.[97]

Ambiguity also surrounds threats. In their discussion of strategies of challenging deterrence, George and Smoke identify different levels of challenge, ranging from limited probes to all-out assaults on commitments. All of these can reasonably be considered challenges,

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[95] Harold James and Dennis Shiel Small, *The Undeclared War: The Story of the Indonesian Confrontation* (London: L. Cooper, 1971); Henry Shockley, *The Reluctant Raj: Britain's Security Role in Malaysia, 1940-1970*, Ph.D. dissertation, American University, School of International Service, 1973; J.A.C. Mackie, *Konfrontasi: The Indonesia-Malaysia Dispute, 1963-1966* (London: Oxford University Press, 1974).

[96] Graham Allison, *Essence of Decision: Explaining the Cuban Missile Crisis* (Boston: Little, Brown, 1971), pp.230-234; Raymond L. Garthoff, *Reflections on the Cuban Missile Crisis* (Washington, D.C.: Brookings, 1987), pp.6-7; Lebow and Stein, *Who Is the Enemy?*, ch.4, citing Soviet sources. George and Smoke, *Deterrence in American Foreign Policy*, pp.463-464, believe that one of the reasons why Khrushchev may have discounted Kennedy's warnings is that they came after he was committed to the missile deployment.

[97] This issue is discussed at length in Lebow and Stein, *Who Is the Enemy?*, ch.4.

although, as we argue later, it is important in the absence of good information about an initiator's intentions to distinguish challenges that have as their purpose testing or clarifying a defender's commitment from those that are designed to override deterrence. George and Smoke also observe that challengers can try to defeat deterrence by "designing around" a commitment. They cite the Soviet challenge to Berlin in 1958 as an example; the Soviets initiated a low-level, indirect assault on the Western position in Berlin in the hope of eroding the allied commitment without provoking a serious crisis.[98] Adversarial behaviour cannot always be neatly divided into the presence or absence of challenge. Challenges come in degrees and investigators must deal with them accordingly.

IDENTIFYING DETERRENCE SUCCESS AND FAILURE

We start from the premise that the immediate goal of deterrence is to dissuade another actor from carrying out a specified behaviour. In the context of international relations, the most important objective of deterrence is prevention of a use of force.[99] To achieve this end, deterrence theory stipulates that a state must carefully define the unacceptable behaviour, communicate a commitment to punish transgressors (or deny them their objectives), possess the means to do so, and demonstrate the resolve to implement its threat.[100] When these

[98] George and Smoke, *Deterrence in American Foreign Policy*, pp.400-403, 417-418, 428-429, 439. Stein, "Calculation, Miscalculation, and Conventional Deterrence I: The View from Cairo," describes how Sadat sought to design around Israeli deterrence.

[99] As noted earlier, we also include in our cases deterrence practised to prevent threatening military deployments. Examples include President Kennedy's attempt to deter the Soviet Union from deploying offensive weapons in Cuba and attempts by Israel to deter Arab neighbors from force deployments in the vicinity of its borders.

[100] For a discussion of the concept of deterrence and the requirements for its successful operation, see William W. Kaufmann, *The Requirements of Deterrence*; Henry A. Kissinger, *The Necessity of Choice* (New York: Harper, 1960), pp.40-41; Bernard Brodie, "The Anatomy of Deterrence;" Morton A. Kaplan, "The Calculus of Deterrence," *World Politics* 11 (October 1958): pp.20-44; Thomas W. Milburn, "What Constitutes Effective Deterrence?" *Journal of Conflict Resolution* 3 (June 1959): 138-46; George Quester, *Deterrence Before Hiroshima: The Airpower Background to Modern Strategy* (New York: Wiley, 1966); Thomas Schelling, *Arms and Influence*.

conditions are met and the proscribed behaviour still occurs, we can properly speak of a deterrence failure.

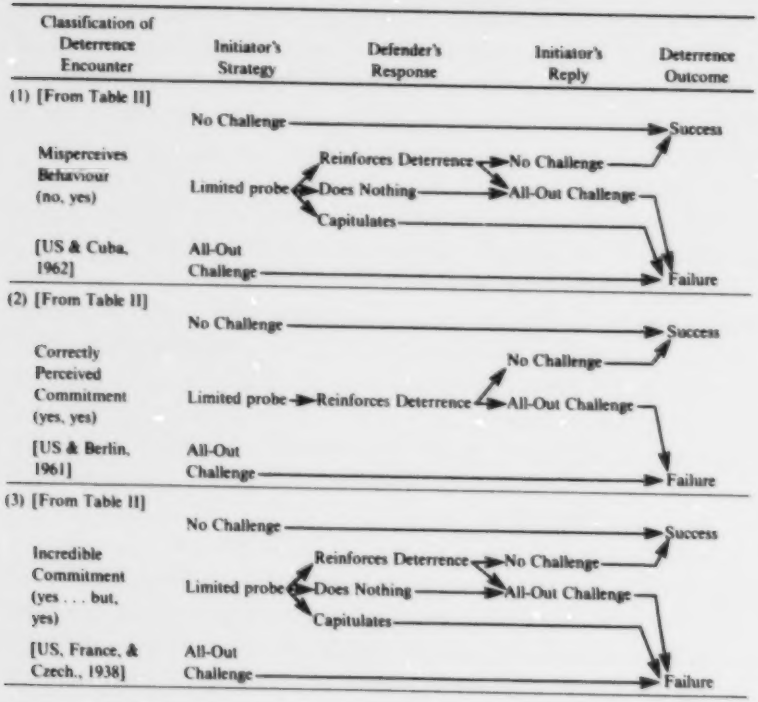
As Table III indicates, deterrence failures can take three generic forms. Deterrence can fail because the initiator doubts the defender's willingness to risk war in defence of its commitment. Hitler's judgment that Britain and France lacked the resolve to defend Czechoslovakia has become the paradigmatic example. Deterrence can fail because an initiator doubts its adversary's capability to defend its commitment or retaliate in a sufficiently costly matter to make a challenge unattractive. Portugal's inability to deter India from attacking Goa in 1961 is a good example. Despite Portugal's efforts to reinforce its garrison in Goa, even these augmented forces were not sufficiently potent to reinforce Portugal's commitment; indeed, they capitulated without firing a shot when the Indian army crossed the frontier.[101]

Deterrence can fail when an initiator has no doubts about a defender's resolve or its capability to defend its commitment or retaliate in response to a challenge. This can occur when the initiator's leaders estimate the costs of inaction to be greater than the costs of a challenge, as Sadat did in 1973. For Sadat, war with Israel promised limited military and major political gains, whereas acquiescence to the status quo seemed likely to undermine his domestic political authority.[102] Initiators can also conclude that the rewards of a challenge will exceed its costs. As the American failure to deter Iranian attacks against shipping in the Persian Gulf indicates, this can happen even when the defender is militarily much more powerful than the challenger. American threats of retaliation made attacks on oil tankers more rather than less attractive to Iran's leaders because of the domestic political benefits they expected to reap from being the

[101] Neville Maxwell, *India's China War* (New York: Doubleday, 1972), pp.236-242.

[102] Stein, "Calculation, Miscalculation, and Conventional Deterrence I: The View from Cairo."

TABLE III:
DETERRENCE OUTCOMES



victim of the "Great Satan's" aggression.[103] This case and others like it indicate that credible and potent military threats fail to deter when they do not deny would-be initiators the possibility of achieving important goals.[104]

[103] Janice Gross Stein, "The Wrong Strategy in the Right Place: The United States in the Gulf," *International Security* 13 (Winter 1988-89), pp.142-167; Thomas L. McNaugher, "Walking Tightropes in the Gulf," paper prepared for the Brookings Institution, November 1988, p.13, argues that "Reflagging only made things worse. It presented radical elements in Iran with the opportunity to reinvigorate sagging revolutionary elan, possibly to isolate and weaken more pragmatic leaders, by angling to pick a fight with the 'Great Satan.' "

[104] Other examples include the French challenge to Britain at Fashoda in 1898 and the Russian challenge in 1903-04 of the Japanese position in Korea. Both cases are described in Lebow, *Between Peace and War*, pp.70-80.

Deterrence failures can further be divided into failures of deterrence strategy and failures of deterrence theory. Deterrence failures that result from faulty execution of the strategy by a defender, lack of resolve, or inadequate military capability, represent failures of deterrence strategy, not of deterrence theory. Deterrence failures that occur when resolve is unquestioned and capability potent, represent failures of deterrence theory as well as of strategy.

In distinguishing between failures of strategy and theory we need to pay attention to the accuracy of the judgments initiators make about defenders' capability and resolve. An initiator may proceed with a challenge because its leaders falsely estimate that their adversary lacks the resolve or capability to defend its commitment. Nasser's challenge of Israel in June 1967 was predicated in part on the assumption, belied by subsequent events, that Egypt could defeat the Israel Defence Forces, even if Israel attacked first.[105] In 1914, Germany's support of Austria's ultimatum to Serbia was based on a faulty estimate of Russian resolve — Russia was expected to refrain from intervention — *and* an exaggerated respect for Russian military power.[106] Deterrence theory can accommodate misjudgments of resolve or capability when they are attributable to inadequate information or uncertainty.[107] But faulty estimates that are wildly at variance with available information contradict the most important assumption of deterrence theory: that leaders behave more or less in accord with rational norms. The two cases cited constitute failures of deterrence strategy *and* deterrence theory.

Investigators confronting cases involving serious misperception must be careful to avoid applying a double standard. Deterrence may succeed because challengers make grossly inflated estimates of a

[105] Nasser's calculations and his misjudgment of Israeli military capability are discussed in Stein, "Deterrence and Miscalculated Escalation," and in Lebow, "Deterrence Failure Reconsidered," pp.206-209.

[106] Lebow, *Between Peace and War*, ch.5.

[107] Deterrence theory requires reasonably accurate estimates of resolve and capability by a challenger but can accommodate minor deviations from rational norms of estimation. See Robert Jervis, "Rational Deterrence: Theory and Evidence."

defender's capability or resolve just as it may fail when challengers underestimate their adversary's capability or resolve. When deterrence appears to succeed because of irrationality, some of its advocates have treated this kind of evidence as confirmation of the efficacy of the strategy; they suggest that a policy of deterrence that inflates adversarial perceptions of a defender's resolve or capability is well-executed. But when deterrence fails because challengers underestimate resolve or capability, analysts argue that the irrationality of the challenger invalidates the case as a legitimate test of the theory.[108]

In the analysis of deterrence success, analysts must distinguish among three possible explanations for the absence of a challenge. A commitment may not be challenged because the adversary against whom deterrence was practised never intended to challenge. In this case, immediate deterrence is irrelevant to the outcome. But it may be considered a general deterrence success if leaders were dissuaded from seriously contemplating a challenge by the defender's existing military capabilities and general reputation for resolve.

An initiator can decide against a challenge, or discontinue a probe, for reasons that have nothing to do with deterrence. In late 1971 Sadat actively considered limited military action against Israel's forces in the Sinai. When the war between India and Pakistan began, he cancelled his plans, estimating that the Soviet Union would be preoccupied by its obligations to India.[109] This is not a deterrence success. But cases of

[108] For example, Achen and Snidal, "Rational Deterrence Theory and Comparative Case Studies." This inconsistency points to a fundamental problem with deterrence theory. It assumes rationality on the part of actors but deterrence strategy sometimes relies on irrationality in the form of suicidal threats on the part of the defender and correspondingly inflated estimates of adversarial resolve by the challenger. In his classic study of deterrence, *Arms and Influence*, passim, Thomas Schelling encouraged policymakers to find creative ways of encouraging adversaries to draw false or inflated estimates of American resolve. The contradiction between a rational theory and an irrational strategy is most apparent in, but by no means limited to, nuclear deterrence. Policymakers and analysts have long grappled with the problem of imparting credibility to the inherently irrational US commitment to defend Europe with nuclear weapons.

[109] Stein, "Calculation, Miscalculation, and Conventional Deterrence I: The View from Cairo."

this kind are theoretically interesting and worthwhile objects of study because they point to the variety of constraints on resorts to force that are not directly related to deterrence. Some of these factors may also be subject to manipulation by outsiders.

Immediate deterrence succeeds when a would-be challenger decides against a challenge, or discontinues a probe, because of a defender's efforts to buttress its commitment by making its threat of resistance or retaliation more potent and credible. In effect, the defender must alter the cost-calculus of a would-be challenger's leaders in such a way as to convince them that any gain they expect from a challenge is more than likely to be offset by the losses arising from the defender's resistance or retaliation.

To identify a case of immediate deterrence success, evidence about the intentions and subsequent calculations of the would-be challenger is essential. They cannot be inferred from prior threats or *a priori* assumptions about the initiator's foreign policy goals. Coding of deterrence encounters based on these criteria risk serious error or tautology.

Information about adversarial intentions and calculations is unlikely to be available in all the cases identified as possible deterrence successes. Those cases for which valid evidence is available will almost certainly be biased toward challengers with relatively open political systems and those in which revolutions or other dramatic changes of government and policy have led to an opening of the archives or publicity about the "evils" of the old regime and its policies. Because governments are usually more sensitive about the implications of recent policy decisions than they are about events that occurred decades in the past, more information is likely to be available about historical as opposed to contemporary deterrence encounters. These kinds of biases in available data inevitably influence the selection of cases. As the theoretical and policy implications of these biases are by no means self-evident, they cannot be obviously or easily corrected for in the analysis.

A second and perhaps more significant bias concerns the kinds of cases that researchers will identify as possible candidates of deterrence success. Deterrence can succeed at two different stages of a confrontation. A defender, suspecting a challenge, may practise deterrence in a timely manner and dissuade an adversary from initiating a challenge. Under these conditions, no crisis will occur. But the defender may buttress his commitment belatedly, or adversarial leaders may doubt the defender's resolve and only revise their judgment in the course of a crisis. These encounters result in visible confrontations and are therefore much more likely to be included in any collection of cases. The data set, compiled by Huth and Russett, which claims to be the universe of extended deterrence encounters between 1900 and 1980, includes *only* deterrence cases of the latter kind.

The data requirements necessary to document deterrence success are demanding and the selection biases we have listed are serious. It is possible that together, they make the quantitative analysis of deterrence success impractical due to the difficulty of identifying a sufficient number of valid and critical cases of immediate deterrence success. Preliminary investigation suggests, however, that a small number of "critical" cases can be identified.[110] Using these cases as evidence, hypotheses about the conditions and strategies associated with immediate deterrence success can be formulated and tested.

Explaining Deterrence Success and Failure

We seek to analyze immediate deterrence by specifying a set of independent variables and their relationship to the outcome of deterrence. Our dependent variable is the outcome of immediate deterrence. We code outcomes dichotomously as success or failure. We have nevertheless argued that not all deterrence encounters are comparable; in some the defender's commitment may be firm and in others ambiguous. For purposes of analysis we intend to exclude those cases where there is any reasonable doubt about a commitment

[110] For a discussion of "critical" experiments, see the conclusions to this study.

or any other essential attribute of deterrence. This will, of course, reduce our total number of cases. It should also bias our collection of cases in favour of deterrence success; the theory predicts that deterrence is most likely to succeed when commitments and threats are unambiguous.

To explain immediate deterrence outcomes we intend to examine four sets of independent variables of which only the first can be derived from deterrence theory. The three remaining sets of variables are outside and contradictory to deterrence theory.

(1) Clarity, potency, and credibility of commitment

Deterrence theory stipulates that the most important determinant of the outcome of a deterrence encounter is the credibility of the commitment. Deterrence theory also predicts that the nature of a challenge will be determined by a commitment's credibility: commitments that are not credible will most likely be the object of all-out challenges while ambiguous commitments are more likely to elicit probes by challengers interested in testing a defender's resolve.[111] George and Smoke found some confirmation of this expected covariation.[112]

The emphasis of deterrence theory on credibility derives from its fundamental underlying assumption that challenges are opportunity driven. It asserts that adversaries seek opportunities to make gains, and that they exploit the opportunities they find. It accordingly

[111] Stephen Maxwell, "Rationality in Deterrence," *Adelphi Paper* No. 50 (London: International Institute for Strategic Studies, 1968), p.18; George and Smoke, *Deterrence in American Foreign Policy*, pp.80, 551, criticize early deterrence theorists for treating the credibility of commitments as an "either-or" question. In reality, they argue, commitments vary in scope and intensity and this variance will influence a challenger's choice of strategy.

[112] George and Smoke, *Deterrence in American Foreign Policy*, passim; John Mearsheimer, *Conventional Deterrence* (Ithaca: Cornell University Press, 1983), makes a different prediction about challenges. He argues that modern states display a strong tendency to seek decisive victories and thus to challenge commitments, even those that are credible, by all-out assaults.

prescribes clearly defined commitments and a credible capacity to inflict unacceptable costs as the best means of restraining adversaries.

Credibility has three components: a commitment's clarity; its potency, or a defender's capability to inflict unacceptable costs on a challenger; and the apparent resolve to do so if the commitment is challenged. Clarity is most easily assessed. If the defender has defined the proscribed action with a reasonable degree of specificity and communicated it directly or indirectly to a would-be challenger, it can be considered clear for purposes of testing deterrence.[113]

Capability is considered an essential component of credibility by all deterrence theories. Most of these theories assume that if a commitment is clear and unambiguous, the relative military balance will determine the outcome of deterrence.[114] But neither the consequence nor the measure of military capability are simple matters. Gross measures of capability can reveal little about the ability of a country to defend a specific commitment.[115]

Huth and Russett address this problem by distinguishing the overall military balance from the local balance and from immediately usable capabilities.[116] These indicators are still unsatisfactory because they say nothing about an initiator's perception of a defender's usable military capability, or of changing trends in the military balance. Case studies indicate that these are the more relevant considerations for deterrence.[117]

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[113] Lebow, *Between Peace and War*, pp.82-97, reviews these conditions and their analysis by "first wave" deterrence theorists.

[114] Dina A. Zinnes, Robert C. North, and Howard E. Koch Jr., "Capability, Threat, and the Outbreak of War," in James Rosenau, ed. *International Politics and Foreign Policy: A Reader in Research and Theory* (New York: Free Press, 1969), pp.469-482; Ze'ev Maoz, "Resolve, Capabilities, and the Outcomes of Interstate Disputes, 1816-1976," *Journal of Conflict Resolution* 27 (June 1983), pp.195-229.

[115] Lebow, "Windows of Opportunity," pp.182-186, discusses the problems of measuring military capability and its implications for deterrence theory.

[116] Huth and Russett, "Deterrence Failure and Crisis Escalation," pp.33-34.

[117] Lebow, *Between Peace and War*; Jervis, Lebow, and Stein, *Psychology and Deterrence*; Lebow and Stein, "Beyond Deterrence."

Classical deterrence theories assume that would-be challengers assess a defender's resolve in terms of its reputation for honouring past commitments. Thomas Schelling, probably the most influential deterrence theorist, described commitments as interdependent; a failure to defend any one of them, he argued, would encourage adversaries to doubt a defender's resolve to defend any other. "We tell the Soviets that we have to react here because, if we did not, they would not believe us when we said that we will react there."[118]

Critics charge that this is an apolitical approach to strategy. George and Smoke argue that commitments ought to be expressions of fundamental interests. When they fail to reflect important interests, adversaries are unlikely to find them believable regardless of the effort defenders make to enhance their credibility. The quest for credibility is no substitute for underlying national interests.[119] Even Schelling surmised that some interests may be so important that other governments will not question a state's willingness to defend them whether or not it has voiced an intention to do so.[120] Robert Jervis calls these "intrinsic interests," and distinguishes them from strategic interests or commitments, where judgments about credibility may turn on the efforts a defender makes to convey its resolve.[121] Huth and Russett similarly emphasize the importance of interests in imparting credibility to extended deterrence.[122]

Deterrence theorists do not specify how much military capability or firmness in defence of past commitments is necessary to impart

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[118] Schelling, *Arms and Influence*, pp.194, 374.

[119] George and Smoke, *Deterrence in American Foreign Policy*, pp.550-561; Maxwell, *Rationality in Deterrence*, p.18.

[120] Schelling, *Arms and Influence*, p.52.

[121] Robert Jervis, "Deterrence Theory Revisited," *World Politics* 31 (January 1979), pp.289-324. This distinction was first made by Glenn Snyder and Paul Diesing, *Conflict Among Nations* (Princeton: Princeton University Press, 1977), pp.183-184. For a discussion of the role of interests versus bargaining reputation in influencing the credibility of commitments, see Patrick M. Morgan, "Saving Face for the Sake of Deterrence," and Lebow, "Conclusions," in Jervis, Lebow, and Stein, *Psychology and Deterrence*, pp.125-152, and 203-232.

[122] Huth and Russett, "What Makes Deterrence Work?", p.516.

credibility to present commitments. Nor do they adequately address the question of the relative importance of bargaining reputation versus interests in influencing would-be challengers' estimates of a commitment's credibility. William Kaufmann and Thomas Schelling, the theorists whose discussion of credibility is the most extensive and sophisticated, emphasize the inherently subjective nature of credibility. They propose no independent criteria for assessing credibility and make no attempt to model the process by which would-be challengers assess a defender's commitment. They devote their attention to the techniques a defender can use, in Kaufmann's words, to lend "an air of credibility" to commitments. This kind of analysis is not helpful in formulating rigorous tests of deterrence theory.[123]

The failure of Schelling, Kaufmann, and other deterrence theorists to develop independent criteria for assessing credibility or to examine the impact of its variation has had baneful consequences. It has encouraged less sophisticated analysts to infer credibility from the behaviour of a challenger. When a commitment is not challenged, they assume it must have been seen as credible. When a challenge occurs, they infer that the commitment lacked credibility and then seek explanations of why the initiator doubted the commitment's credibility.[124] This kind of reasoning is tautological.

In an attempt to develop a more valid measure, credibility was coded in an earlier study on the basis of the estimates of the analyst, those of contemporary third parties, and of subsequent historians.[125]

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[123] Kaufmann, *Requirements of Deterrence*, p.7.

[124] Richard Ned Lebow, "The Cuban Missile Crisis: Reading the Lessons Correctly," *Political Science Quarterly* 98 (Fall 1983), pp.431-458, looks at this problem in the context of the missile crisis. John Orme, "Deterrence Failures: A Second Look," *International Security* 11(4) (March 1987) pp.96-124, reasons tautologically in his analysis of a number of cases in which deterrence failed in an attempt to attribute these failures to poor execution by defenders rather than to failures of deterrence theory. Seweryn Bialer, *The Soviet Paradox: External Expansion, Internal Decline* (New York: Knopf, 1986), p.362, is one of many writers who makes the counterfactual case in reverse in the context of Soviet-American relations by asserting that "nuclear deterrence has prevented a direct Soviet-American military confrontation."

[125] Lebow, *Between Peace and War*.

All three sources were used to determine if the defender met the several conditions for credibility stipulated by deterrence theory. Although these judgments are in part subjective, they are nevertheless independent of the outcome and specific to the commitments in question. We propose to use the same approach in this study and, in addition, ask a representative group of historians and international relations scholars to review our judgments. We will eliminate cases where the review results in unresolved controversy about the credibility of specific commitments.

(2) Opportunity versus need

Deterrence is unabashedly a theory of "opportunity." Our empirical analyses of deterrence failures point to an alternative explanation for the use of force — which we term a theory of "need." Evidence from these cases indicates that strategic vulnerabilities and domestic political needs can create compelling incentives to use force. When leaders become desperate, they may resort to force even though the military balance is unfavourable and there are no grounds for doubting adversarial resolve. Deterrence can be an inappropriate and even dangerous strategy in these circumstances. It can intensify the pressure on leaders to act, make the costs of inaction unbearable, and inadvertently provoke the very behaviour it is designed to forestall.[126]

Deterrence can also be defeated by wishful thinking. When policymakers feel pressed and see no acceptable alternative to a challenge of their adversary's commitment, they may not behave in accordance with the norms of instrumental rationality. Their motivated errors can be pronounced and identifiable as they become predisposed to see their objectives as attainable. Under these conditions, leaders are especially likely to distort threat assessments and become insensitive to warnings that the policies to which they are

[126] Lebow, *Between Peace and War*; Jervis, Lebow, and Stein, *Psychology and Deterrence*; Stein, "The Right Strategy in the Wrong Place: The United States in the Gulf;" and Lebow and Stein, "Beyond Deterrence," contain case studies and analysis of their theoretical implications for deterrence. Lebow and Stein, in *Who Is the Enemy?* document similar kinds of processes in the Soviet-American relationship.

committed are likely to end in disaster. Policymakers can convince themselves, despite good evidence to the contrary, that they can challenge an important adversarial commitment without provoking war. Because they know the extent to which they are powerless to back down, they expect their adversaries to accommodate. Policymakers may also seek comfort in the illusion that they will emerge victorious at little cost if the crisis gets out of hand and leads to war.[127]

In most adversarial relationships, leaders resort to military challenges only in extraordinary circumstances. Our cases indicate that this is most likely to occur when they confront acute political and strategic vulnerabilities and further believe that the only way to cope with the pressures they face is through a use of force. Under these circumstances, leaders may decide to challenge an adversarial commitment even if there is no good evidence to expect the challenge to succeed. Leaders may convince themselves, quite without objective evidence, that there is a prospect of success.[128] When leaders do not feel impelled by political and strategic needs, they are much less likely to challenge even when they perceive the opportunity to do so.[129]

The two-by-two matrix in Table IV summarizes some of the most important differences between the classical theory of deterrence and our analyses of deterrence failures. These differences are explained by

[127] *Ibid.*

[128] Paul Huth, *Extended Deterrence*, pp.200-201, contests this proposition. He found only weak support for the kind of motivated bias we have identified as a major cause of deterrence failure. But Huth did not control for the intensity of a challenger's motives. Almost half of his cases are probes where the initiator was "testing the waters" and prepared to pull back if serious resistance were encountered. Although this is not a valid indicator of intensity, one possible inference is that in these cases challengers were not motivated by an intense sense of urgency. These are not the kinds of confrontations in which motivated bias is likely to lead to wishful thinking. We hypothesized that wishful thinking is much more likely to occur when leaders feel compelled to challenge their adversary when they confront acute domestic and strategic problems. A study based on valid data that controlled directly for the motivation and intensity of a contemplated challenge might find support for the importance of motivated bias and the wishful thinking it so often engenders.

[129] Lebow, "Windows of Opportunity: Do States Jump Through Them?"

TABLE IV:

DETERRENCE MATRIX
OPPORTUNITY
(in the form of an adversary's vulnerable commitment)

Motive high hostility a constant	NO OPPORTUNITY	OPPORTUNITY
	no challenge	challenge

LEBOW-STEIN MATRIX
OPPORTUNITY
(in the form of an adversary's vulnerable commitment)

Motive needs in the form of strategic and domestic value	NO OPPORTUNITY	OPPORTUNITY
Low need	no challenge	no challenge
High need	possible to likely	very likely

the political and psychological components of our critique of deterrence.[130]

Empirical analyses of cases suggest that it is an oversimplification to draw a sharply dichotomous distinction between opportunity and need as motives for military challenges. Many, if not most, challenges contain elements of both. Most analysts agree that Iraq attacked Iran in 1980 because of a complex mixture of motives.[131] It saw the opportunity to take advantage of Iran's domestic turmoil — clearly a motive of opportunity — but also acted out of fear that the Ayatollah Ruhollah Khomeini would attempt to export Iran's revolution to overthrow Iraq's regime. Most of the cases we examined were, nevertheless, skewed toward one or the other of the extremes. For purposes of analysis we will classify these cases accordingly, drawing on expert judgments in each case as well as independent evidence of domestic political strain and strategic weakness.

Classical deterrence theory directed its attention almost entirely to the behaviour of defenders.[132] With the important exception of George and Smoke, analysts of deterrence generally have paid little attention to the interests, calculations, and expectations of initiators, or have assumed that they can readily be inferred from defenders' commitments and behaviour. We believe that the appropriate starting point in the analysis of deterrence is the perspective of the initiator; deterrence encounters begin with decisions by leaders to challenge commitments of their adversaries. Our empirical analysis of immediate deterrence failures indicates that these decisions tend to be

[130] The third component of that critique, the practical difficulties of implementing deterrence, pertains primarily to deterrence as a strategy. However, to the extent that it indicates the pervasiveness of serious obstacles to the implementation of deterrence, it suggests that deterrence theory is not a good guide to the formulation of strategy. See Lebow and Stein, "Beyond Deterrence."

[131] Mark A. Heller, *The Iran-Iraq War: Implications for Third Parties*. JCSS Paper No. 23. (Tel Aviv and Cambridge: Jaffee Center for Strategic Studies and Harvard University Center for International Affairs, 1984); Charles Tripp, "Iraq — Ambitions Checked," *Survival* 28 (November-December 1986), pp.495-508.

[132] William W. Kaufmann, *The Requirements of Deterrence*, pp.6-8; Henry Kissinger, *The Necessity for Choice*; Thomas Schelling, *Arms and Influence*.

dominated by leaders' concern with their own problems and needs; the defender's interests and behaviour at times play only a marginal role in the initiator's calculations. It is therefore imperative to examine the decisionmaking processes and calculations of initiators. Why do they consider challenges and then persevere or back away? To what extent are they — if at all — influenced by the policies of defenders?

From this perspective, we offer a set of propositions to guide our research on immediate deterrence. The most important of these concern the motives and the intensity of the initiator's commitment to action:

1. Initiators are motivated by need, opportunity, or a mixture of the two. Deterrence is most likely to succeed when challengers are largely opportunity driven. It will be more likely to fail when challengers are motivated by needs, and see these needs as expressions of vital state or political interests. In practice, challengers are usually motivated by different combinations of the two motives.

2. Deterrence challenges are motivated by differing degrees of risk acceptance on the part of initiators. Deterrence is most likely to succeed when an initiator envisages a challenge as a probe, is prepared to back down if serious resistance is encountered, and designs the challenge to minimize the costs of possible retreat. Deterrence will become more problematic as the risk acceptance of the challenger increases. It will be least likely to succeed in cases when the initiator "burns his bridges" and makes retreat extremely costly or politically impossible.

3. The motivation for a challenge and its intensity are interdependent. When challengers are motivated largely by need, they are more likely to become intensely committed to a challenge. In these circumstances, deterrence is least likely to succeed. It is most likely to succeed when challenges are opportunity driven probes.

4. Self-deterrence is often more effective than deterrence imposed from the outside. Our research indicates that when leaders consider

costs, they are frequently more sensitive to possible domestic losses than they are to external costs, and also more aware of their own limitations than they are of the strengths of their adversaries. For this reason, domestic costs and perceived self-limitations are more likely to deter leaders from a challenge than costs imposed from the outside. As a corollary, the kind of deterrent strategies that are most likely to succeed are those which raise the perceived domestic costs of a challenge and thereby contribute to self-deterrence.

Deterrence is an interactive process and the initiator's calculations and behaviour can be influenced by the defender. Some kinds of strategies will be more effective than others in influencing would-be challengers. In this connection, we offer two further hypotheses about deterrence from the perspective of the defender:

5. Deterrence is more likely to succeed if it is attempted early, before an adversary becomes committed to a challenge. Once leaders are committed, the political and psychological costs of backing down increase significantly. Evidence from our case studies reveals that leaders committed to challenges are less sensitive to warnings and evidence indicating that their policies may lead to a undesirable outcomes.

6. To the extent that self-deterrence is more effective than external threats, the most efficacious strategy of deterrence is one that attempts to manipulate domestic costs and make them more salient in the minds of adversarial leaders. Successful deterrence may therefore hinge on the penetrability of a would-be challenger's polity and alliances to outside influences.

(3) Deterrence and Reassurance

Strategies of reassurance begin from a different set of assumptions. Like deterrence, they presume ongoing hostility but root the source of that hostility in adversaries' feelings of acute vulnerability. Whereas deterrence attempts to discourage the resort to force by persuading adversaries that such action would be too costly, reassurance seeks to reduce the incentives adversaries have to use force. In the broadest sense, reassurance tries to ameliorate adversarial hostility by trying to

reduce the fear, misunderstanding, and insecurity that, we argue, are so often responsible for escalation to war. Reassurance dictates that defenders try to communicate their benign intentions and their interest in alternative ways of addressing the issues in dispute.[133]

Reassurance, like deterrence, can be divided into immediate and general reassurance. General reassurance is designed to alter an adversary's calculations of the relative advantages of the use of force in comparison to other alternatives. It attempts to shift the trajectory of a conflict and to encourage an adversary to restructure and reframe a problem by creating alternatives to the use of force. Immediate reassurance, like immediate deterrence, seeks to prevent an anticipated challenge to a specific commitment. It attempts to reduce adversarial perceptions of hostility, the domestic pressures to act, the workings of the security dilemma abroad, and the likelihood of miscalculation.

We have identified and intend to study five strategies of reassurance that vary in the scope of their objectives.[134] The most ambitious strategies of reassurance seek to shift the trajectory of the conflict and create alternatives to a use of force. One strategy designed to initiate a process of reciprocal cooperation, "tit for tat," has recently received a great deal of attention.[135] A strategy of reciprocal concessions can be

[133] Strategies of reassurance are conceptually distinct from cooperation and negotiation. Cooperation between adversaries on security issues can take place across a broad spectrum of issues even when the parties do not consider a use of force likely. See Alexander L. George, Philip J. Farley, and Alexander Dallin, eds., *U.S.-Soviet Security Cooperation: Achievements, Failures, Lessons* (New York: Oxford University Press, 1988). Negotiation generally refers to the exchange of proposals to reach mutually satisfactory joint agreements in a situation of interdependence. A reassurance strategy is closer to one of "prenegotiation," that attempts to make negotiation a salient and attractive option; it is used in the process of getting to the table rather than at the table itself. See Janice Gross Stein, ed. *Getting to the Table: The Processes of International Prenegotiation* (Baltimore: Johns Hopkins University Press, 1989).

[134] Lebow and Stein, "Beyond Deterrence," pp.41-63, and Janice Gross Stein, "Deterrence And Reassurance," describe these strategies in detail.

[135] Robert Axelrod, *The Evolution of Conflict* (New York: Basic Books, 1984); Robert O. Keohane, "Reciprocity in International Relations," *International Organization* 40 (Winter 1986), pp.1-28; Deborah W. Larson, "Crisis Prevention and the Austrian State Treaty," *International Organization* 41 (Winter 1987), pp.27-60, and "The Psychology of Reciprocity in International Relations," in Janice Gross Stein, ed. "International Negotiation: A Multi-disciplinary Perspective," *Negotiation Journal* 4 (July 1988), pp.281-301.

used to initiate tacit or explicit communication between adversaries in an effort to signal an interest in moving away from a use of force and toward negotiation. To compensate for some of the serious weaknesses of tit for tat, leaders can also try to break out of habitual conflict through less conventional methods of unilateral and irrevocable concessions. This kind of strategy tries to send a credible signal of leaders' interest in addressing the issues in conflict and in alternatives to the use of force. We classify these kinds of strategies as general reassurance.

When leaders anticipate a deliberate challenge to a specific commitment or consider a miscalculated challenge likely, they can in the first instance use strategies of immediate reassurance to compensate for some of the obvious drawbacks of deterrence. They can attempt through self-restraint to avoid exacerbating the pressures and constraints that operate on an adversary who may choose force because of the costs of inaction. This kind of strategy is designed to reduce the pressures on their adversary to act. To reduce the likelihood of a miscalculated challenge, they can also develop informal "norms of competition" to regulate their conflict and signal the limits of their intentions. In a closely related strategy, leaders can attempt to put in place informal or formal regimes designed specifically to build confidence and reduce uncertainty. "Limited security regimes" can reduce the probability of miscalculated war. If time permits, they can also experiment with strategies of general reassurance.

These strategies are neither mutually exclusive nor logically exhaustive. They can be used separately or in conjunction with deterrence.[136] Like deterrence, reassurance strategies are difficult to implement. They too confront strategic, political, and psychological

[136] George, Hall, and Simons, *The Limits of Coercive Diplomacy*, pp.1-35, first explored the interaction of deterrent and reward strategies. Thomas W. Milburn, "The Concept of Deterrence: Some Logical and Psychological Considerations," *Journal of Social Issues* 17, No. 3 (1961), pp.3-11, and Thomas W. Milburn and Daniel J. Christie, "Rewarding in International Relations," *Political Psychology* 10 (December, 1989), pp.625-646.

obstacles. There is every reason to believe, for example, that cognitive barriers to signalling can just as readily obstruct reassurance as they can deterrence. One of our research objectives is to identify these obstacles as well as the conditions associated with successful reassurance.

An adversary's motives are likely to be important in determining the effectiveness of strategies of reassurance. If an adversary is driven largely by domestic political needs or strategic weakness, then reassurance may be more appropriate as a substitute for deterrence. If adversarial motives are mixed, reassurance may be more effective as a complement to deterrence. When an adversary is motivated primarily by opportunity, reassurance is likely to misfire and encourage the challenge it is designed to prevent.

Determining the relative weight of need and opportunity as motivating factors of an adversary's strategic choices is extraordinarily difficult. In most cases, both are likely to be present in different degrees. This determination is critical, however, because it speaks to the appropriate mix and sequencing of deterrence with strategies of reassurance.[137] Not enough is known about the interactive effects of deterrence and reassurance in different sequences under different conditions.

We want to analyze the impact of reassurance in the context of deterrence. To do this, we intend to identify cases of immediate deterrence in which one or more reassurance strategies were also practised and to explore the relationship between them.[138] In this connection, we offer three additional propositions:

[137] Dean Pruitt and Jeffrey Rubin, *Social Conflict: Escalation, Stalemate, and Settlement* (New York: Random House, 1986) suggest, for example, that a combination of firmness and concern is most effective in managing social conflict.

[138] We recognize the possibility that those cases in which defenders practise deterrence and reassurance may differ from those in which they only practise one or the other. We propose to compare the results of the analysis with cases in which only deterrence and only reassurance are attempted.

7. Reassurance is more likely to succeed when an adversary is driven largely by domestic political needs and/or strategic weakness.

8. Reassurance is likely to encourage the challenge it is designed to prevent when an adversary is motivated primarily by opportunity.

9. When adversarial motives are mixed, reassurance and deterrence are more likely to succeed when practised in tandem.

The hypothesized synergism between deterrence and reassurance raises further interesting research questions. It is reasonable to suppose that there are important relationships between immediate and general reassurance and between deterrence and reassurance at all levels. Analysis of these relationships would promote a better understanding of the dynamics of both deterrence and reassurance as strategies of international conflict management.

(4) Perception and context

Deterrence theory specifies as mutually exclusive the roles of challenger and defender and further assumes that their identification in any deterrence encounter is obvious to adversarial leaders and analysts alike. But case studies indicate that neither assumption is warranted. As we observed in the Cuban missile crisis, both the Soviet Union and the United States perceived themselves to be the defender. This pattern of overlapping perception appears widespread in deterrence encounters and almost certainly has significant implications for the behaviour of the parties.

The roles of challenger and defender, even when distinct and mutually clear, are divorced by deterrence theory from the political context in which a challenge occurs. Leaders who see themselves as challengers may simultaneously believe that their action is justified by important legitimate and defensive interests.[139] Egypt in 1973,

[139] Paul Stern, Robert Axelrod, Robert Jervis, and Roy Radnor examine the impact of perceptions of legitimacy on the outcome of deterrence in their "Conclusions," in *Perspectives on Deterrence* (New York: Oxford University Press, 1989), pp.294-321.

Somalia in 1977, and Argentina in 1982 typify this pattern. In all three conflicts, initiators used force to right what to them were unacceptable wrongs inflicted on them by aggressive adversaries. Conversely, a defender may attempt to protect illegitimate gains for offensive purposes.

Leaders who believe that they are acting for legitimate and defensive reasons, and who are committed to rectifying perceived injustices, are more likely to resort to force. Such a pattern of perception may help to explain why apparently credible commitments are challenged. Under these conditions, leaders are also more likely to be supported by relevant domestic constituencies; domestic support may make a challenge more attractive and its possible adverse consequences more tolerable. There is every reason to believe that the behaviour of defenders is similarly affected. To the extent that leaders consider their interests legitimate and defensive, we would expect them to be more willing to buttress and defend their commitments.

At least two related bodies of theoretical literature support the importance of role perceptions. Some recent work in cognitive psychology suggests that "self-schemas" dominate the hierarchy of available schemas. They are more important in processes of attribution than schemas of others or of events.[140] Analysis of the normative importance of legitimacy suggests that perception of a challenge as "legitimate" will affect the intensity of commitment to action. Further, leaders with different normative standards act on their own judgments of legitimacy and use these standards to judge the legitimacy of other's threats and commitments. Paul Stern argues that when a would-be initiator sees its challenge as the legitimate defence of an interest or exercise of a right, reinforcement of a commitment by a defender is likely to lead to escalation and deterrence failure.[141]

[140] Stephen G. Walker, "The Impact of Personality Structure and Cognitive Processes Upon American Foreign Policy Decisions," paper presented to the annual meeting of the American Political Science Association, September 1988, Washington, D.C.

[141] Paul Stern et. al., "Conclusions."

The extent to which there are observable differences among challengers and defenders in their perception of their roles and of the legitimacy of their respective interests is an important theoretical and empirical question that requires systematic analysis. If empirical analysis demonstrates that in a number of "critical" cases, role perceptions converge to obliterate the role differentiation specified by deterrence theories, the utility of the theory becomes questionable. It is these designations of roles that give deterrence theory much of its explanatory and predictive power. At a minimum, our discussion of role perceptions suggests two final working hypotheses for empirical investigation:

10. Deterrence is more likely to fail when the challenger and defender in an immediate deterrence encounter both perceive themselves to be the defender.

11. Deterrence will be more likely to fail when challenger and defender both believe that they are acting in defence of legitimate national interests.

The several sets of variables we have identified are almost all outside of deterrence theory. Only the first variable, the credibility of a commitment, is derived from the theory. But we have relatively little confidence in its explanatory power because our previous empirical investigations of deterrence failures revealed that seemingly credible commitments are challenged. The most elaborate efforts to impart credibility to a commitment may prove insufficient to discourage a challenge when policymakers conceive of a challenge as legitimate, or as the only way of coping with serious strategic or domestic problems.

Policymakers can misperceive the credibility of commitments even when they are not motivated to do so. Commitments, like other signals, only take on meaning in context. If the cultural or political context would-be challengers use to interpret commitments differs from the context in terms of which they were framed by defenders, they can easily be misunderstood.[142]

[142] This aspect of misperception is explored in Robert Jervis, "Perceiving and Coping with Threat," and Lebow, "Conclusions," both in *Psychology and Deterrence*, pp.204-211, and Lebow and Stein, "Beyond Deterrence," pp.18-23.

Our second set of variables treats motive. In contrast to deterrence theory which assumes that challenges are responses to opportunity, we argue that many important challenges have been need driven. This difference in motive reverses the flow of cause and effect. Opportunistic challenges are a response to incredible commitments. Challenges driven by need are initiated by policymakers who consider it rational to attack credible and well-defended commitments because they believe, perhaps correctly, that the costs to themselves or their countries of not attacking will be even greater.

Leaders driven by need may devote much more time and energy, as did Sadat in 1973, to find strategies that design around defenders' commitments or military capabilities. They are also more likely to believe that their challenges will succeed. This motivated bias can lead to significant underestimation of an adversary's capability or resolve and a greater likelihood of deterrence failure.

The different locus of causation in challenges driven by need and by opportunity, calls for an equivalent shift in the kinds of explanations that can account for deterrence success and failure. One of the important questions we want to examine is the extent to which factors like strategic and domestic needs, which appear to account for deterrence failure, are also present when deterrence succeeds. Our explanations of the causes of failure can only be tentative until they are validated against well-substantiated cases of deterrence success.

Our third set of variables attempts to examine deterrence in relation to other strategic interactions and strategies of conflict management. Our case studies indicate that one of the most critical determinants of the outcome of deterrence is the degree of desperation felt by a would-be challenger. Leaders are far more likely to resort to force if they believe that their strategic and political problems will become more acute in the future, that the military balance will deteriorate, and that there is little or no possibility of achieving their goals through diplomacy. Under these conditions, deterrence may heighten the sense of desperation leaders feel and thereby make the use of force more attractive. Strategies of

reassurance that seek simultaneously to reduce the likelihood of miscalculation as well as the pressures on leaders to use force and to create new alternatives may moderate adversarial behaviour. We propose to explore the interactive impact of reassurance and deterrence.

Our fourth set of variables concerns the role perceptions of adversaries and embodies what is perhaps our most fundamental critique of deterrence theory. Deterrence theory is premised on the objective determination of the roles of challenger and defender and assumes that adversarial leaders perceive themselves accordingly. Case studies reveal little support for either proposition. Challenger and defender often have quite arbitrary meanings and role perceptions are frequently symmetrical and contested. Self-definitions of role are not only at variance with the theory but may have critical import for behaviour and the outcomes of deterrence encounters. If so, deterrence theory is an inadequate and misleading conceptualization of conflict. It encourages students of international affairs to frame adversarial relationships in terms of roles that are at variance with the self-perceptions of the principal actors. The defining concept of a deterrence encounter may itself be inappropriate given the difficulty of distinguishing deterrer from challenger once a conflict is put in context.

Deterrence in Relationships

The most common pattern of empirical analysis of deterrence is the cross-national comparison of immediate deterrence encounters. These studies deliberately draw their data from a large number of cases involving diverse actors in widely different contexts. This kind of analysis is reminiscent of the traditional approach to zoology. For the sake of classification and comparative anatomical analysis, a large number of specimens were collected in the field and brought to the laboratory for study. This approach permitted zoologists to ask some interesting and important questions but told them very little about the behaviour of the animals. To understand behaviour in context, it is necessary to observe the life cycles of animals in their natural habitats.

The study of deterrence needs to be similarly enriched by contextual studies.

An examination of the evolution of immediate deterrence within an adversarial relationship is a logical starting point. In what ways do deterrence encounters influence the practice and outcome of successive deterrence encounters? One of the most fundamental premises of deterrence theory is that learning takes place between adversaries. Commitments, threats, and the defender's record in defending its commitments, are expected to be decisive influences on the future calculations of adversaries. This assumption is a proper focus of empirical study. How do successive deterrence encounters facilitate learning between adversaries? What attributes of a deterrence encounter are most critical in influencing or altering the expectations of would-be initiators and defenders? What effect, if any, do deterrence success and failure have on the frequency and outcome of subsequent deterrence encounters?

The study by George and Smoke is based on a longitudinal selection of cases involving the United States and China, and the United States and the Soviet Union. While recognizing that some of the deterrence encounters were significantly influenced by the outcome of earlier cases, George and Smoke made no explicit attempt to analyze how past encounters influenced subsequent cases.[143] They also deliberately restricted their analysis to encounters in which the United States perceived itself as the defender.

Some quantitative studies have tried to address this question. Russell Leng tested several hypotheses about the effects of past behaviour on crisis strategies in eighteen cases that included three successive crises among six pairs of states. He found a general tendency on the part of both winners and losers to adopt a more coercive strategy in the next crisis in which they confront each

[143] In the Cuban missile crisis, they speculate about the influence of the prior Berlin crisis on Khrushchev's decision to deploy missiles in Cuba.

other.[144] Huth and Russett attempted to test the influence of past resolve on the effectiveness of extended deterrence by three different measures: whether the defender fought on behalf of its protege in the previous encounter, whether it was successful in that encounter, and whether it was linked to the protege by a formal alliance.[145]

The three indicators of resolve used by Huth and Russett do not measure directly either resolve or adversarial perceptions of resolve. The previous challenge of a protege may not be the most recent deterrence encounter in which the defender's resolve has been tested, nor is it necessarily the most recent encounter with the same adversary. Huth and Russett also code the outcome of cases without any reference to how the actors themselves perceived the outcomes. In several cases, there is evidence of significant discrepancy between their interpretation of the outcome and those of the parties involved. This approach also presupposes that the most recent previous encounter, regardless of its severity, outcome, or locale, is the most important trigger of learning. There are both conceptual and empirical reasons for doubting the validity of this assumption.[146]

There is no reason to assume that the immediately prior deterrence encounter is the critical one for a defender. The "lesson" of Munich had an enormous influence in shaping the American practice of deterrence even though the United States was not involved in the crisis that led to the Munich settlement.[147] Munich became the

[144] Russell J. Leng, "When Will They Ever Learn? Coercive Bargaining in Recurrent Crises," *Journal of Conflict Resolution* 27 (September 1983), pp.379-419, found that victors tend to repeat their strategies, but will adopt more coercive strategies if their adversaries do. Crises that end in compromise or war also encourage more coercive strategies, unless the war was perceived as "unwanted."

[145] Huth and Russett, "What Makes Deterrence Work?"

[146] Robert Jervis, "Deterrence and Perception," *International Security* 7 (Winter 1982-83), pp.3-30; Lebow, "Conclusions," Jervis, Lebow, and Stein, *Psychology and Deterrence*, pp.217-220, discuss the problems of drawing inferences about a deterrer's resolve on the basis of its leaders' past performance.

[147] Ernest R. May, *"Lessons" of the Past: The Use and Misuse of History in American Foreign Policy* (New York: Oxford University Press, 1973); Richard Ned Lebow, "Generational Learning and Foreign Policy," *International Journal* 40 (Autumn 1985), pp.556-585.

paradigmatic case for post-war generations of American leaders and theorists of deterrence. The other significant deterrence encounter for American policymakers and international relations theorists was the Cuban missile crisis. It spawned or confirmed a series of critical lessons about crisis prevention and management.[148] Subsequent experience has not significantly altered these lessons. In the opinion of many students of crisis management, they are based on a distorted understanding of the origins and dynamics of the missile crisis, and are inappropriate and dangerous in contemporary conditions.[149]

There are a few longitudinal studies of deterrence that directly focus on learning. Most of these involve the People's Republic of China. Jan Kalicki analyzed the series of Sino-American crises in the 1950s and concluded that immediate deterrence, as practised by both countries, became more effective because both sets of leaders became more sensitive to each other's interests and signals.[150] Alan Whiting conducted a comparative analysis of the Chinese practice of deterrence in the 1950s and 1960s and found only a limited ability to learn from past experience. He argued that Chinese efforts to deter India in the early 1960s were confounded by many of the same mistakes that made Chinese deterrence of the United States in the

[148] For a discussion of these lessons, see Albert Wohlstetter and Roberta Wohlstetter, "Controlling the Risks in Cuba," *Adelphi Paper*, no. 17 (London: International Institute for Strategic Studies, 1965); James A. Nathan, "The Missile Crisis: His Finest Hour Now," *World Politics* 27 (1975), pp.265-281; Barton J. Bernstein, "The Week We Almost Went to War," *Bulletin of the Atomic Scientists* 32 (1976), pp.13-21.

[149] On the enduring and inappropriate nature of the political lessons of Cuba, see Richard Ned Lebow, *Nuclear Crisis Management: A Dangerous Illusion* (Ithaca: Cornell University Press, 1987); Lebow and Stein, *Who Is the Enemy?*; George, Farley and Dallin, eds. *U.S-Soviet Security Cooperation*; McGeorge Bundy, *Danger and Survival: Choices About the Bomb in the First Fifty Years*. On the technical side, see Paul Bracken, *The Command and Control of Nuclear Forces* (New Haven: Yale University Press, 1983); Lebow, *Nuclear Crisis Management*; Kurt Gottfried and Bruce G. Blair, eds., *Crisis Stability and Nuclear War* (New York: Oxford University Press, 1988).

[150] J.H. Kalicki, *The Pattern of Sino-American Crises*. His cases are the origins of the Korean War, Chinese intervention in Korea, Indochina (1954), which he refers to as a "crisis by proxy," and the two Taiwan crises.

1950s relatively ineffective.[151] Gurtov and Hwang also studied Chinese threats and use of force but focussed on the interplay between security and domestic policy. Basing their analysis on five case studies spanning the period from the Chinese intervention in Korea in 1950 to the Sino-Soviet border clashes of 1969, they found Chinese leaders most willing to consider the use of force when they perceived the domestic costs of a foreign policy defeat to be extremely high. In these circumstances, deterrence, even when practised against China by a superior military power, was likely to fail.[152]

To the extent that these studies lend support to the contention that previous deterrence encounters influence the subsequent practice of deterrence, the frequency of challenges, and their outcome, they present a problem for analysis based on the aggregation of data across cases. Statistical inference generally requires the independence of cases. If the existence or outcome of one deterrence encounter influences the probability or outcome of another, the assumption of independence is violated.[153] Moreover, statistical analysis based on cross-case analysis is unlikely to capture these kinds of effects over time. Time series analysis, which can build in the lagged impact of variables over time, is likely to be a more valid methodological approach.

A second and equally important research question is the relationship between immediate and general deterrence. Immediate deterrence may be described as the tip of the deterrence iceberg. It is important to analyze the complex links between immediate and general deterrence and the ways in which the practice of one affect the course and outcome of the other. We attempt to address some of these

[151] Allen S. Whiting, *The Chinese Calculus of Deterrence: India and Indochina* (Ann Arbor, Mich.: University of Michigan Press, 1975); Steve Chan, "Chinese Conflict Calculus and Behavior: Assessment from a Perspective of Conflict Management," *World Politics* 30 (April 1978), pp.391-410, agrees with Whiting that in both the Korean and Sino-Indian disputes Peking failed to give sufficient lead time to its adversaries to reconsider their policies.

[152] Gurtov and Hwang, *China Under Threat*.

[153] This problem has been pointed out by Levy, "Quantitative Studies of Military Threat and Response," p.19, in his review of the research of Huth and Russett.

questions in a forthcoming study of the Cuban missile and Soviet-American crisis arising out of the 1973 Middle East War. The origins and dynamics of both crises are analyzed within the broader framework of general deterrence, as understood and practised by both superpowers. We then examine the ways in which the lessons of the crises, as interpreted by Soviet and American policymakers, subsequently influenced their practice of general deterrence. Our study indicates serious limitations to both kinds of deterrence and suggests that they are related in ways that are quite contrary to the predictions of deterrence theory.[154]

DETERRENCE AND CONFLICT RESOLUTION

Immediate deterrence attempts to prevent a specified challenge. General deterrence must do more than merely "buy time" by preventing challenges; it must also help to transform a conflict so that the defender's need to rely on deterrence diminishes.[155] Proponents of deterrence routinely claim that deterrence can and does contribute to conflict resolution but no empirical studies substantiate these claims.[156]

To test the long-term effects of deterrence, it is necessary first to identify conflicts in which deterrence has been practised that have been resolved or "cooled down" to the point where the defenders' perceptions of the likelihood of future military challenges have diminished considerably, if not altogether disappeared.[157] Possible cases might include Anglo-American and Anglo-French relations in the second half of the nineteenth century and Israeli-Egyptian, Sino-American, and Soviet-American relations in the post-1945 period. All

[154] Lebow and Stein, *Who Is the Enemy?*.

[155] This point is made by George and Smoke, *Deterrence in American Foreign Policy*, p.5.

[156] Some of these claims are critically evaluated in Lebow and Stein, "Beyond Deterrence," pp.29-33.

[157] A satisfactory analysis would then compare the results of the analysis of these kinds of cases against cases over time where general deterrence was practised but the conflict continues, and cases where a conflict was ameliorated in the absence of general deterrence.

of these conflicts were characterized by acute crises or wars between the protagonists and all were transformed over time into relationships in which the prospect of violence has seriously diminished.

In none of these relationships is it easy to distinguish defender from challenger. If it is sometimes difficult to distinguish challenger from deterrer in immediate deterrence encounters, it is that much more difficult, if not impossible, to do so in the case of general deterrence. A challenger can become a defender over time, and a defender can exploit an opportunity to resort to force. The categories of defender and challenger can be static, arbitrary, and misleading. To the extent that both parties consider war a possibility, both will seek to maximize their relative political and military advantages. Under these conditions, the dichotomy between challenger and defender becomes, in Edward Kolodziej's words, "a distinction without a difference."[158] The Egyptian-Israeli conflict gives vivid testimony to this phenomenon. The cycle of provocation and response went through so many iterations that the behaviour of the antagonists became more or less indistinguishable. From whose perspective should the long-term consequences of deterrence be examined?

The Soviet-American relationship also illustrates this dilemma. There is a consensus among American students of the Soviet Union that Soviet foreign policy has evolved considerably since the Cold War. Soviet-American crises have become rare rather than common events and at least one survey of elite opinion reveals that perceptions of Soviet aggressiveness have declined markedly.[159] Some analysts assert that in the last decade Soviet policy has become predominantly defensive; its primary goal is the preservation rather than the expansion of its sphere of influence. Commenting on this apparent and remarkable change, one prominent hawk recently exclaimed: "The Cold War is over. We won it!"[160]

[158] Edward A. Kolodziej, "The Limits of Deterrence Theory," *Journal of Social Issues* 43, no.4 (1987), p.129; Richard Ned Lebow and Janice Gross Stein, "Beyond Deterrence: Building Better Theory," *Journal of Social Issues* 43, no.4 (1987), pp.156-157.

[159] Lebow and Garofono, "The Military Balance and Soviet Aggressiveness: Testing the Predictions of Deterrence Theory."

[160] Edward Luttwak, chairing a seminar at the Center for the Study of International Affairs, Georgetown University, 1 November 1988.

Any assessment of the impact of American deterrence in the transformation of Soviet foreign policy raises the larger conceptual problem of deterrence as a strategy that can be practised simultaneously by both parties to a conflict. A mutual attempt at deterrence is likely to occur when each perceives its adversary as the challenger and itself as defender. When these perceptions are accurate, the conflict is symmetrical: each adversary is simultaneously a defender and a challenger. Deterrence theory does not recognize this possibility and provides no analytical framework for assessing the long-term consequences of mutual deterrence. This omission is peculiar because the fundamental premise of most studies of nuclear strategy is that each superpower is practicing deterrence against the other.[161]

To assess the contribution of deterrence to the amelioration or resolution of conflict, its impact must be disentangled from other processes and events that influence the evolution of a conflict. Examination of particular cases illustrates the difficulty of assessing the impact of deterrence on conflict resolution. If Soviet foreign policy continues to evolve along the lines developed by Brezhnev's successors, especially Mikhail Gorbachev, the puzzle for analysts is explaining the change. Is it due to American military capability and resolve; the steep and unacceptable cost of the arms race; Soviet failures in Eastern Europe, Afghanistan, and elsewhere in the Third World; a crumbling domestic economy; a new leader with a very different set of priorities; or the synergistic interaction of all of these developments?

[161] Some analysts have recognized that two adversaries can simultaneously practise deterrence but have not dealt with the theoretical implications of this phenomenon. Organski and Kugler identify four cases of nuclear deterrence as instances of "mutual deterrence": the Berlin Wall, 1961; Cuba, 1962; the Czech Coup in 1968; and the China-Vietnam War of 1979. It is instructive to note that two of these four cases lie outside the scope of deterrence: in 1968, the United States did not attempt to deter the Soviet Union and in 1979, China practised unsuccessful compellence, not deterrence, against Vietnam. In the remaining two cases, Organski and Kugler do not discuss the theoretical difficulties in conceiving a deterrence relationship as one of adversaries with overlapping roles.

It is especially difficult to assess the impact of deterrence on conflict resolution because policymakers are generally reluctant to admit the ways in which they have been constrained by an adversary's practice of deterrence. Researchers must generally infer the impact of deterrence from the documentary record of the substance of subsequent policy decisions and their timing. Interpretations based on evidence of this kind are almost always subject to challenge.

One or both sides can also misperceive the motives of the other and practise deterrence against a country whose leaders do not wish to upset the status quo by force. Deterrence will be counterproductive in these circumstances."[162] It is also likely to become self-fulfilling, confronting analysts with the same problem they must grapple with in cases of immediate deterrence where apparent success is confirmed tautologically.[163]

Finally, whether deterrence is practised by one or both adversaries, conflict resolution or amelioration is almost invariably the result of changes in goals and strategies on *both* sides. Deterrence would have us look only at the challenger, and in a very narrow way. To establish the impact of deterrence in the transformation of a conflict, it is necessary to analyze the broader foreign policies of both sides, not only their strategies of deterrence. But this kind of analysis cannot be undertaken in the absence of a theory that identifies the additional variables and specifies relationships between these variables and deterrence.

The Empirical Analysis of Deterrence

Our analysis of deterrence raises important questions about the methods appropriate to its study. Generally speaking, analysts have relied on two methods: detailed comparative analysis of a number of

[162] Jervis, *Perception and Misperception in International Politics* (Princeton: Princeton University Press, 1976), ch.3; Lebow and Stein, "Beyond Deterrence," pp.36-40, examine the ways in which general deterrence can exacerbate conflict.

[163] This point is made by Robert Jervis, *Perception and Misperception in International Politics*, ch.3.

"critical" cases to assess the impact of both structural and process variables; and analysis by aggregating data across a large number of cases to permit the quantitative testing of causal models which incorporate the principal structural explanations. Although these methods are often treated as mutually exclusive, they are more appropriately conceived of as complementary.[164] Each method has different data requirements and permits different kinds of inference.

Aggregate data analysis across cases places a heavy burden on investigators. They must examine large numbers of cases in sufficient historical detail to establish the intentions of putative challengers and document the behaviour of the defenders. They must do this to determine in the first instance whether a case qualifies as a deterrence encounter. Examination of cases must go well beyond existing data collections to a wide range of primary and secondary sources, since the intentions of alleged initiators are critical to the identification of relevant cases. Investigators must also make explicit their criteria for coding outcomes in each case included in their collection. This kind of documentation is essential, given the multiple interpretations characteristic of many of the cases. It is misleading, then, to assume that the analysis of data aggregated across large numbers of cases can be less labour intensive or less demanding in the evidence that it requires.[165]

A further requirement of aggregate data analysis is a large enough number of cases to test even the small number of explanatory variables identified by deterrence theory as critical. At a minimum, the number of both deterrence successes and failures must be

[164] For the most recent debate on this subject, see Achen and Snidal, "Rational Deterrence Theory and Comparative Case Studies;" Alexander L. George and Richard Smoke, "Deterrence and Foreign Policy," *World Politics* 41 (January, 1989), pp.170-182; Jervis, "Rational Deterrence: Theory and Evidence;" Lebow and Stein, "Rational Deterrence Theory: I Think, Therefore I Deter;" and George Downs, "The Rational Deterrence Debate," *World Politics* 41 (January 1989), pp.225-237.

[165] For a carefully constructed data set across cases of international crisis, which draws exhaustively on the primary and secondary literature, see Michael Brecher, Jonathan Wilkenfeld, *et al.*, *Crises in the Twentieth Century* Vols. I and II (London: Pergamon Press, 1988), Vol. III (London: Pergamon Press, 1989).

significantly larger than the number of independent variables in the model if any valid inferences are to be drawn. Our review of cases of immediate extended deterrence in this century suggests that this essential requirement has not been met. Thus far, the small number of cases of deterrence successes identified effectively precludes this kind of analysis as a valid method of theory testing.[166]

Most quantitative testing assumes either a sample drawn from an identified universe, or analysis of the universe itself. For reasons we have already made clear, neither approach is feasible in the analysis of deterrence. The inability to identify the universe of cases or construct a representative sample has troubling consequences. Among the most important advantages of causal and correlational analyses across cases is the ability to generalize with reasonable confidence in the validity of the inferences that are drawn. In the absence of a properly drawn sample or a universe of cases, the validity of inferences is subject to the same kinds of limitations characteristic of small numbers of detailed case studies.

Aggregation across cases also washes out much of the impact of perceptual and decision making variables on the outcome of deterrence. In the testing of some theories, it can be argued that these kinds of variables are neither theoretically important nor empirically justified; their inclusion in a model adds little to the proportion of variance that is explained. This proposition cannot be sustained with respect to deterrence theory. As we have argued, theories of deterrence are, at their core, psychological theories; they are built on assumptions about the way leaders think under specified conditions.[167] These assumptions must be interpreted through auxiliary assumptions which, in turn, must be measured through indicators that tap leaders' beliefs, estimates, and judgments.

[166] See Lebow and Stein, "Deterrence: The Elusive Dependent Variable," for a detailed examination of the data set of extended immediate deterrence in this century compiled by Huth and Russett. Ten cases, the number of cases of immediate extended deterrence we find in the data set, is far too small to permit the valid testing of a causal model across cases.

[167] See Lebow and Stein, "Rational Deterrence Theory: I Think, Therefore I Deter."

Aggregating data across cases permits the analysis of the impact of structural variables, but has great difficulty in accommodating the kind of perceptual data required for a valid test of the theory.[168] Huth and Russett, for example, were forced to rely on indirect measures of the critical psychological variables in their model. This is a large cost of aggregating data across cases.

Aggregation of data across cases also fails to capture many of the important changes in the critical variables affecting a deterrence relationship over time. Indeed, it treats cases of deterrence out of context and does not permit sustained analysis of the learning that may occur as a relationship evolves. A cross-case analysis may pose serious threats to valid inference even in the analysis of cases of immediate deterrence, since often these encounters are not isolated but embedded in a relationship with a past and a future as well as a present. Nor can aggregation across cases capture the complex relationships between general and immediate deterrence, or say very much about the functioning of general deterrence. In this regard, time series and longitudinal analyses seem more promising.

For all these reasons, we propose that the next step in the testing of deterrence theory is the careful, focussed comparison of cases. Central to a valid test of the theory is the identification of as many cases of immediate and general deterrence as available data permit. Scholars must cooperate in the identification and coding of cases by sharing historical data and seeking the judgments of expert historians where the data are open to multiple interpretation, as they so often are. Only through painstaking research can a valid collection of cases

[168] See Alexander L. George, "The Causal Nexus Between 'Operational Code' Beliefs and Decision-Making Behavior: Problems of Theory and Methodology," in Lawrence Falkowski, ed. *Psychological Models and International Politics* (Boulder, Co.: Westview Press, 1979), pp.95-124. George and Smoke also note: "But in general it appears that adequate attention cannot be given with the statistical-correlational methodology to the intervening, decision-making variables in deterrence. . . . One salient reason is that these intervening variables tend to alter from case to case in complex ways which cannot readily be compressed into a small number of predefined values for coding." *Deterrence in American Foreign Policy*, p.91. See also Jack Levy, "Quantitative Studies of Deterrence."

be assembled. Even then, we do not expect that the relevant universe of cases can be identified or that a sample can be constructed. We cannot address the question of how often deterrence succeeds or fails. We can, however, hope to discover why, when, and how deterrence succeeds and fails.

The subsequent methodological steps are open to question, for they depend entirely on the results of the identification and coding of cases. If a sufficiently large number of cases of deterrence successes can be documented, then the development of longitudinal models which can be analyzed statistically is one promising path of analysis. Based on our admittedly preliminary search of the evidence of cases of immediate deterrence in this century, we are not optimistic.

If only a small number of cases of deterrence success can be identified, then the design of causal models to be subjected to quantitative testing is precluded. The data would not justify this kind of methodology. We will have no choice but to rely on a carefully controlled comparison of cases as the primary methodology of testing deterrence theory. This kind of testing has its strengths and weaknesses. It is, of course, more difficult to generalize from an analysis of a small number of cases. To compensate in part for the limited ability to generalize, we plan to isolate several "critical" cases for especially detailed analysis and controlled comparison.[169] Analysis of cases in which deterrence theory predicts a low probability of success and deterrence nevertheless succeeds should constitute a strong test of the theory.

Detailed analyses of critical cases also provide significant advantages. They can narrow the gap between essential theoretical

169 In the experimental tradition, a "critical" experiment is one which seeks real world observations confirming the empirical expectations of a theory in circumstances most unlikely to have done so unless the theory is powerful. When the hypothesized result nevertheless occurs, it constitutes the strongest test of the theory. See Arthur L. Stinchcombe, *Constructing Social Theories* (New York: Harcourt Brace, 1968), pp.20-28.

concepts and their empirical measurement, either qualitatively or quantitatively. They are also better able to discriminate among competing theoretical explanations insofar as they reconstruct leaders' processes of decisions. Indeed, we argue, as do others, that even were the community of scholars able to identify a sufficiently large number of cases of deterrence success, detailed comparative analysis of cases would still be necessary.[170] Only analyses of this kind can trace the process through which leaders make their decisions. We argue that these processes are important intervening variables between structural variables and the outcome of decisions. Their understanding is essential for the testing of deterrence theory and the validation of causal explanations derived from aggregate analysis.

In summary, we propose as the first essential step in the testing of deterrence theory the construction of a collection of cases of immediate deterrence success and failure. This kind of collection can be built only through collaboration among historians, area experts, and analysts of deterrence. It is the first essential step because without a valid data base the testing of deterrence theory is impossible. Once a valid data set is assembled, proponents and critics of deterrence can begin to test their respective hypotheses by their preferred methods with results that will be more meaningful to each other, more in accord with the canons of scientific inquiry, and more relevant to policymakers.

[170] Huth and Russett share this perspective. They argue the necessity of detailed case studies to complement the testing of models built on large numbers of cases and both include detailed analysis of cases in their work.

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When Does Deterrence Succeed and How Do We Know?

Although deterrence is an ancient strategy, it has assumed special prominence in the nuclear age where the purpose of military establishments has increasingly become preventing instead of winning wars. Deterrence theory and strategy have gained widespread acceptance, but the main propositions of deterrence theory have never been subjected to the usual testing prescribed by social science. This monograph reviews existing studies of deterrence and identifies their inadequacies. Lebow and Stein then build on this critique to reformulate deterrence theory and elaborate a new research programme to test its central propositions.

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